

SOAP

SANITARY CHEMICALS



Enduring

QUALITY

WHEN you incorporate Ungerer perfuming materials into any of your Soap products, you are insuring odor persistence. The enduring quality inherent in all Ungerer products guarantees that result. Our strict adherence to these quality standards suggests in many ways the classic sculptury of ancient Grecian times, which was in that age a leading exponent of Enduring Quality.

•
UNGERER & CO.

161 SIXTH AVENUE

NEW YORK

Dependability...

With CHUIT, NAEF

DEPENDABLE quality has been synonymous with Firmenich (Chuit, Naef) specialties and aromatic products for forty-five years. Today, we also point to a record of dependability in *uninterrupted deliveries*, not exceeded in any quarter since the beginning of European hostilities—a truly noteworthy performance!

Firmenich & Co.

135 FIFTH AVE., NEW YORK
CHICAGO OFFICE: 844 NORTH RUSH STREET



So You 're Fed Up With The War, Huh?

Don't ever forget. Mister—Rome wasn't built in a day. And building Rome was a snap compared to winning this war.

The United Nations need thousands more planes like those above . . . hundreds more ships . . . millions more men. They're all coming, but it takes time.

Meanwhile, we're not griping and neither should you. Instead, Fuld Bros.' sleeves are rolled up 24 hours a day in a tremendous all-out effort to supply the sanitary chemicals which are necessary to maintaining proper health standards for our civilians and men in service.

Fuld Brothers

FULD SELLS JOBBERS ONLY! • FULD MAKES IT FOR THE LEADERS

702 South Wolfe Street, Baltimore, Maryland

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Liquid Soaps, Floor Seals, Floor Treatments, Deodorant Blocks, Liquid Deodorants, Plumbing Specialties, Special Cleaners, Self-Polishing Waxes, Powdered Waxes, Oil Soaps, Liquid Cleaners, Disinfectants, Insecticides, Metal Polishes, Furniture Polishes, Deodorant Block Holders, Soap Dispensers.

September, 1942

Say you saw it in SOAP!

3



....AND THERE'S QUITE A DIFFERENCE
in Soap Perfuming, too!

The creating of soap perfumes at best, is a specialists job. It requires a happy combination of soap technician and master perfumer, plus long experience. These days with fewer materials to choose from, the job is doubly difficult. So depend on a competent perfumer whose experience in the soap field is broad, to solve your problems in soap scenting. van A-H's perfumers are rich in such specialized experience.

VAN AMERINGEN-HAEBLER, INC. ★ 315 FOURTH AVE., NEW YORK CITY

SOAP

and

SANITARY CHEMICALS

Reg. U. S. Pat. Office

SEPTEMBER
1942

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254 WEST 31st STREET NEW YORK, N. Y.

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DU PONT CONTRIBUTIONS TO AMERICAN AROMATICS



● This product is an example of Du Pont research to meet a specific need. "Alpine Violet," the odor of true mountain cyclamen, is prepared by a process developed independently by Du Pont six years ago. Prior to that time, this aromatic was supplied from a European source.

"Alpine Violet" is an established and valued adjuvant to all six principal floral groups. Although five times as strong as Hydroxycitronella, it is stable, highly resistant to alkali, and non-irritating to skin. "Alpine Violet" blends with all synthetics and essential oils — does not discolor or turn rancid. It is versatile, economical, lasting. Its odor holds over long periods.

AN IMPORTANT FACT FOR PERFUMERS. Du Pont Aromatics enjoy two types of research. Many products, such as "Alpine Violet" and "Indole," are the result of research to meet specific needs. Other valuable contributions are developments of Du Pont interdependent research. For instance, research that led to nylon created "Astrotone" B.R. (synthetic musk). Du Pont's development of synthetic camphor led to Isobornyl Acetate.




Aromatics

E. I. DU PONT DE NEMOURS & CO. (INC.), ORGANIC
CHEMICALS DEPARTMENT, WILMINGTON, DELAWARE

Out of Necessity

comes

IMPROVEMENT



***Davies-Young develops a
better line of soaps to meet
the coconut oil shortage***

You can "thank" the Japs for the coconut oil situation. As you know, coconut oil is practically unobtainable today, all the principal sources of supply having fallen into the hands of the enemy. Furthermore, the Government has made very stringent regulations pertaining to the use of oil in the hands of manufacturers.

To meet this situation Davies-Young has developed an entirely new line of soaps:

DA VEE BASE SOAP

This produces a clear, bland liquid soap up to 20% anhydrous soap content, having high lathering properties due to its coconut oil content.

It is our firm conviction that these new soaps will definitely supplant straight coconut oil soaps even after the emergency.

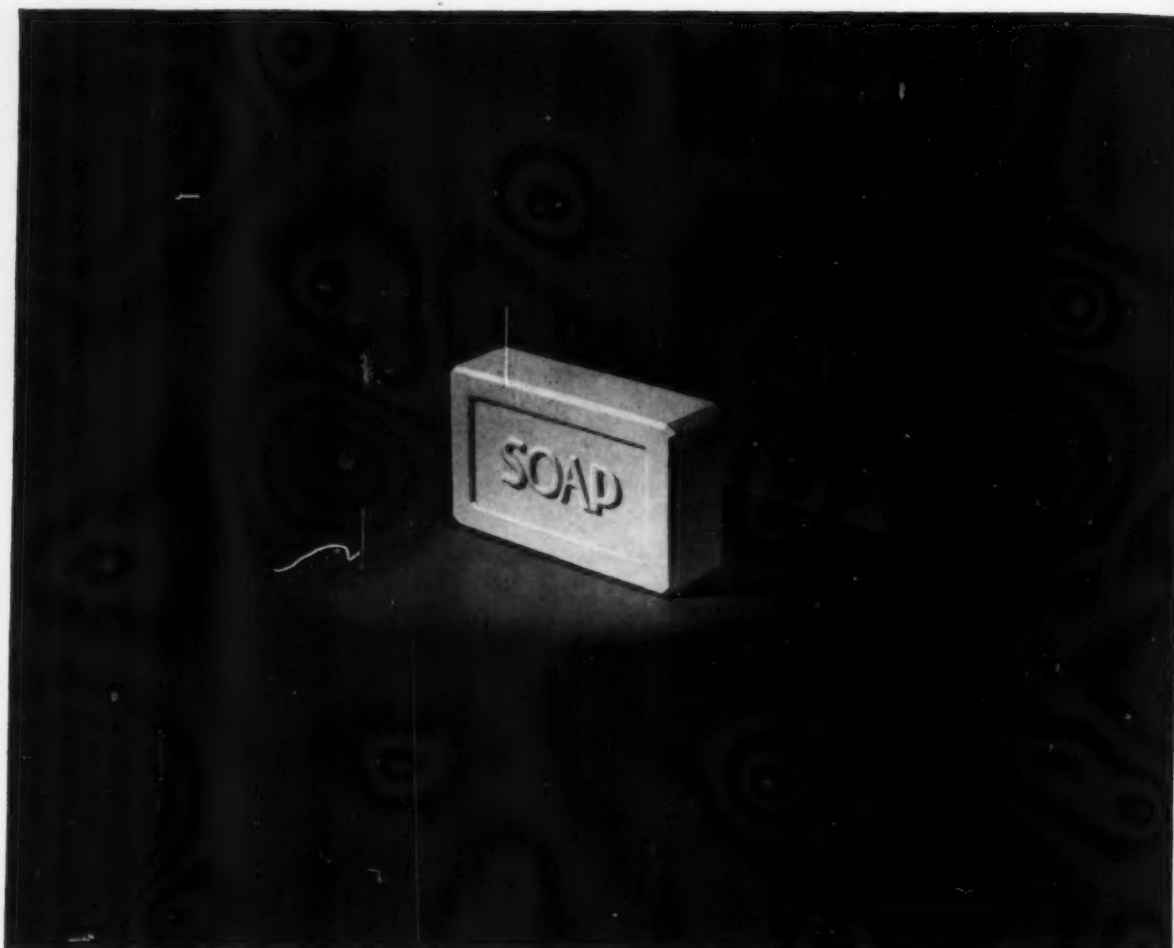
**THE DAVIES-YOUNG
SOAP COMPANY
DAYTON • OHIO**

SEMI-CASTILE LIQUID SOAPS

Furnished in concentrated form and in 15% and 20% concentrations. Clear at sub-zero temperatures. Abundant lathering and soft bland effects.

MAIL IN YOUR ORDERS BY THE 10th OF EACH MONTH

In order to give our regular customers the first call on these soaps, your order must be placed within the first 10 days of each month for shipment that month. After the 15th of each month, any of our allotment of coconut oil, which is not processed or ear-marked for orders received during the first 10 days, will be applied to orders over and above the quota. Future orders cannot be accepted.



DYNAMITE

• There's a lot of potential dynamite where that innocent bar of soap came from. Out of the same vat came glycerin—the stuff from which nitroglycerin, dynamite and cordite are made.

The manufacture of glycerin is an inseparable — and very important — part of the soap industry. In normal times glycerin is a by-product of soap. In times like these, when every extra

ounce of gunpowder strikes an extra blow for democracy, the by-product becomes more important than the product.

Michigan Alkali Caustic has many uses, in wartime as well as peacetime. And other Michigan Alkali products are helping America's industries to keep the materials of war moving out of the factory, up to the front lines of freedom.

M I C H I G A N A L K A L I C O M P A N Y

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THIS TRIPLE THREAT, ONE MAN BOARD OF
HEALTH—AND WATCH DISINFECTANT SALES SOAR**

**SELL HYSAN'S FRAGRANT
NEW-----**

Victory **DISINFECTANT**

• A vastly improved formula. Cleans better, disinfects better, deodorizes better. Does all three—in one fragrant application. At lower cost per unit of germ killing power. Every batch bacteriologically tested. Phenol coefficients of 5, 10, 15.

All size containers. Attractive private labels. Send coupon for sample.

CLEANS BETTER



**DISINFECTS
BETTER**



**DEODORIZES
BETTER**



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Hysan Products Company
58 E. Cullerton St., Chicago

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New VICTORY DISINFECTANT.

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Javonella

Perfect for Perfuming
★ LAUNDRY SOAPS ★ WASHING POWDERS ★ LIQUID CLEANSERS ★ POLISHES, ETC.

EVEN when oil of citronella was low in price and easy to obtain, JAVONELLA was a reliable favorite. A great many manufacturers preferred its finer, cleaner odor, its uniform quality and consistent economy. And now that Citronella is so high in price and difficult to get, JAVONELLA is more important to you than ever before.

WRITE FOR SAMPLES
AND QUOTATIONS

FELTON
CHEMICAL COMPANY
599 Johnson Ave., B'klyn, N. Y.
BRANCHES IN PRINCIPAL CITIES.



Manufacturers of AROMATIC CHEMICALS, NATURAL DERIVATIVES, PERFUME AND FLAVOR OILS

INDEX

... TO A PERFECT BATH CRYSTAL BASE

Check over these characteristics of Solvay Snowflake Crystals as the perfect bath crystal base. You'll find that Snowflake is a product no other base can equal.

FOR SALES APPEAL

Snowflake Crystals have that! Tiny, beautifully delicate crystals that women can't resist!

FOR COLORING AND PERFUMING

Colors add beauty to an already beautiful product. Absorbs dyes readily and quickly. Perfumes take perfectly. There is absolutely no "basic" odor to overcome.

FOR READY SOLUBILITY

Use Snowflake. Dissolves almost instantly. Nothing to "rub" on the bottom of the tub!

FOR SOFTENING WATER

With Snowflake, water is so soft that it feels like velvet! Ordinary bath crystals *harden* the water!

FOR MILDNESS

Snowflake is a pure crystalline product that will not harm or irritate the skin!

FOR DETERGENCY

Snowflake cleanses the skin. Makes soap clean better!

FOR STABILITY

Non-caking. Does not change chemical composition or physical appearance!

FOR FREE FLOWING

Ideal for use in machines!

FOR LOW COST!

A few cents per pound!

FOR BULLETIN

Write for Bulletin No. 224-B "Manufacture of Bath Crystals from Snowflake Crystals"

SPECIAL BULLETIN! TELLS HOW TO PERFUME AND DYE SNOWFLAKE FOR BATH CRYSTAL BASES. FILL IN COUPON!
A special bulletin tells you the details on how simple and easy it is to perfume and dye Snowflake Crystals for bath crystal base. Don't miss this profit making opportunity... **SEND FOR THIS BULLETIN NOW! FILL IN THE COUPON TODAY!**

SOLVAY
Snowflake Crystals

SOLVAY SALES CORPORATION • 40 Rector Street, New York, N.Y.

Gentlemen: Kindly send me a copy of Bulletin, "How to Manufacture Bath Crystals from Snowflake Crystals!"

Name.....

Company.....

Address.....

City..... State..... AJ-942

RESEARCH IN



A stylized line drawing of a test tube stands vertically. Above it, a ribbon-like banner curves across the frame, bearing the word "AROMATICS" in a serif font. The background features soft, overlapping curves and a few radiating lines, creating a sense of depth and movement.

AROMATICS

A background to draw upon

If your organization's creative ability has been temporarily "grounded" by restrictions on certain basic perfume materials, perhaps Givaudan can give wings to your effort. Helping to meet the demands placed upon the ingenuity of the research chemist—to create toiletries of merit from the materials available—is characteristic of Givaudan's business.

Givaudan research and development in new materials has contributed to the success, over the years, of many of the most popular and original toilet preparations. In creating perfume compounds for all types of products that set new fashions in fragrance, Givaudan has

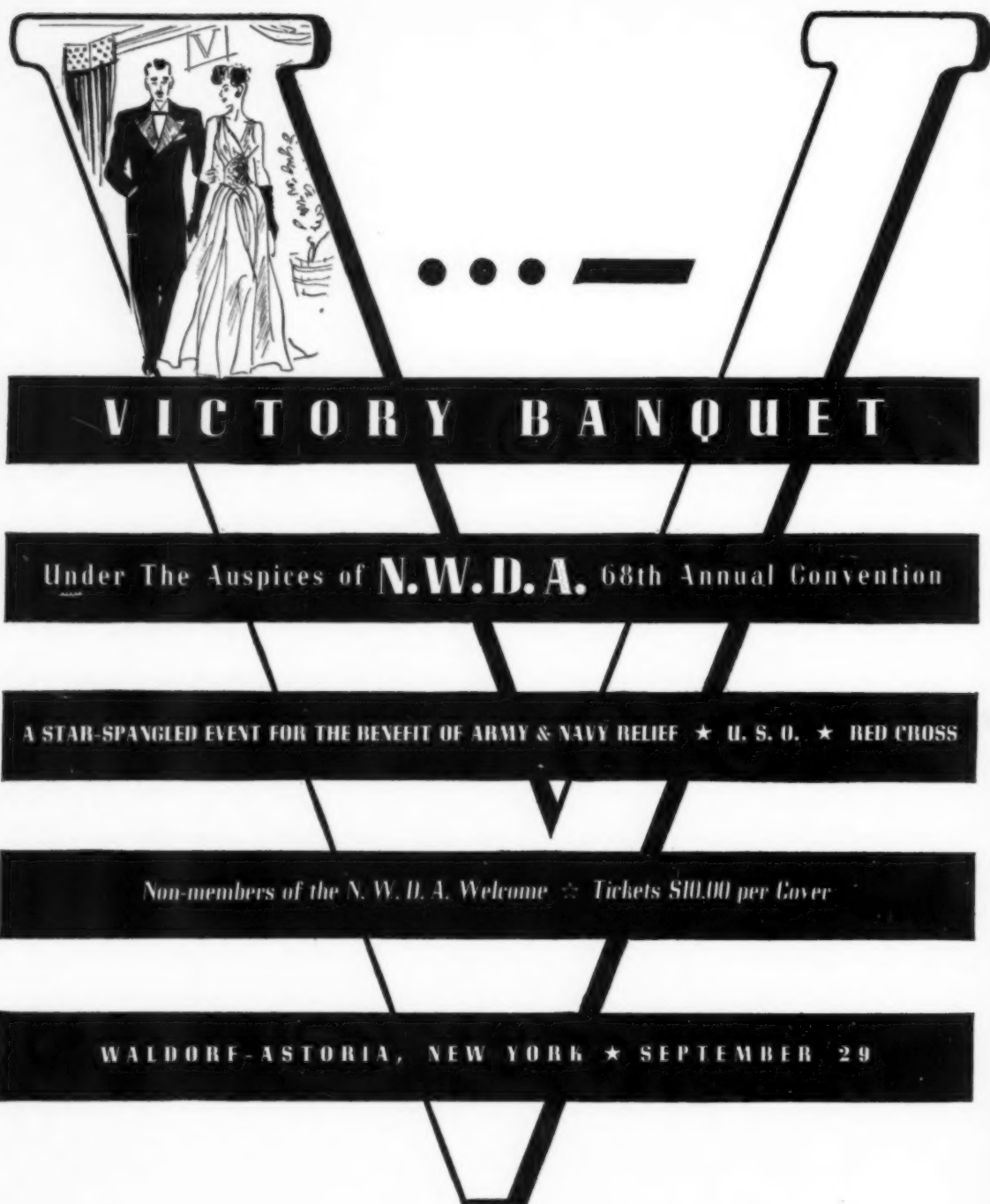
amassed a wealth of practical experience.

You may find this experience extremely helpful today. Confronted with the challenging problem of "stretching" available materials . . . of ingeniously combining them in order to offset those formerly employed and now unavailable, the research chemist has in Givaudan's knowledge a valuable background to draw upon.

Whatever toilet preparations are your specialty—soap, shaving cream, cosmetics or perfume—by fusing our specialized knowledge with your creative skill—we may be able to help in developing toiletries that reflect credit upon you and your organization.

GIVAUDAN - DELAWANNA, INC.

330 WEST 42ND STREET, NEW YORK, N. Y.



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VICTORY SHOW ★ U.S.O. HOUR ★ VICTORY CARNIVAL

Three great shows featuring stars of screen and radio, a famous orchestra and novelty diversissements. A notable evening for the gentlemen and ladies of the Drug, Chemical and Allied Industries. Dress—formal (Black tie).

Send Reservations to PERCY C. MAGNUS, Victory Banquet Chairman,
16 Desbrosses St., N. Y. C.

★

★

★

★

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Scarcity of floral oils . . .

Present dwindling supplies of natural floral essences emphasize the value of high quality substitutes.

Synthetic floral essences can be used to replace the natural oils with full satisfaction and marked success in numerous products,—toilet soaps, shampoos, shaving creams, powders, creams, and many others.

In fact, in many products the newer synthetic floral essences are to be *preferred* for the manner in which they reproduce the true fragrance of the living flowers in the finished product,—not to mention uniformity of quality and odor fidelity, and their economy under present conditions.

Let us tell you more about these newer substitutes as an answer to the growing scarcity of natural floral oils.

NORDA Essential Oil and Chemical Co., Inc.

Chicago Office
325 W. Huron St.

Los Angeles Office
2800 E. 11th Street

St. Paul Office
253 E. 4th St.

Toronto Office
119 Adelaide St., W.

New York Office
601 West 26th St.

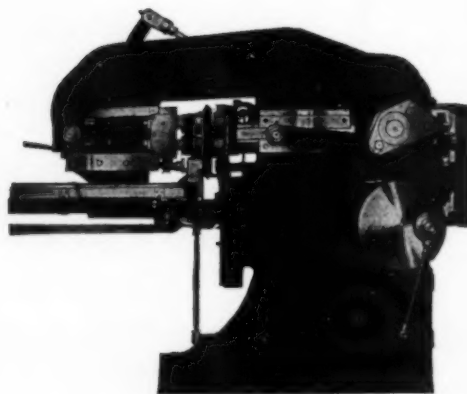
Montreal Office
135 Commissioners St., W.

To our Customers:

DUE to the scarcity of certain materials and the need for a preference rating, the purchase of new soap presses, in many instances, will be difficult.

This, however, is not cause for alarm. Manufacturers who have used our presses for years know they are **BUILT TO LAST**. The design, careful selection of materials, accurate machining and fitting of parts . . . all mean that your presses will last for the duration.

Although we are very busy with war work, largely in developing automatic machinery for handling explosives for the Ordnance Depart-



Type K Laundry and Toilet Soap Toggle Press

ment, we are taking pains to make delivery of repair parts more promptly than ever.

If your need for parts is particularly urgent, please let us know. We will see that you have them in the shortest possible time.

R. A. JONES & COMPANY, Inc.

P. O. BOX 485

CINCINNATI, OHIO

EDITOR

WITH the coming of cool weather, those directing the affairs of the Fat Salvage Campaign expect an increase in the rate of grease collections. Although the heaviest advertising for fat collection has been carried on during the summer months and will shortly expire unless a new series is underwritten, the belief is quite general that the effects will be cumulative and that the "rolling snowball" which has been started will grow steadily as we move into colder weather. It is generally recognized that the use of edible fats is probably twice as great during the winter months as in summer. At the same time, grease is easier to collect and keep, and the rate of collection by each individual is much faster in cold weather. All of which leads those who have studied the problem to express the feeling that the largest waste grease collections will come in the months immediately following the ending of the advertising phase of the campaign.



WHEN the Federal Trade Commission launched its idea to require markings on all colored fabrics to indicate their fastness to one thing or another, soap manufacturers sat up and took notice. For among the proposed required markings is to be one to indicate the color fastness of dress materials to washing,—and when we wash something, and things go wrong, the accusing finger is too often pointed in the direction of the soap used. Although recent research in more than one direction, research outside of the soap industry, indicates that soap is

seldom the cause of the trouble, even soaps containing a high proportion of added alkalies, the feeling is quite common among those who do the washing that soaps are to blame for the trouble when there is trouble.

Because it has much at stake, the soap industry is very much interested in what the Federal Trade Commission does in requiring markings indicating color fastness to washing. The industry wants to be certain,—in advance and not in some later damage cases,—that its interests will be protected and that shortcomings elsewhere will not be blamed on the soap. This has already been called to the attention of the F.T.C. and we hope that they will consider scientific experience in any regulations actually issued on color fastness to washing.



NOT so long ago, David Dietz, Science Editor of the Scripps Howard newspapers, told us in his column that "Ersatz soap, if you wish to call it that, may become familiar in America as the war goes on, for chemists are expecting a soap shortage when the present supply of vegetable and animal oil imports is exhausted." The "ersatz" soaps to which Mr. Dietz refers, are synthetic detergents manufactured from petroleum and not the garden oils which he points out are now in a bad way because of the scarcity of coconut oil.

Is it any wonder that the general public gets an altogether cockeyed slant on the soap situation? Mr. Dietz is only one of many writers who give the impression that American soap has always been made from im-

ported oils and fats only and that when these are all used up,—no more soap. Because coconut oil is scarce, they conclude that soap must also be scarce, and that it will not be long before the magic wand of chemistry will willy-nilly pluck from its silk hat a better, cheaper and more efficient substitute.

To Mr. Dietz we must say that the "chemists" who told him that they are expecting a soap shortage, must have some inside dope on the situation with which the soap industry as a whole is not familiar. Even though our former heavy imports of fats and oils are sharply reduced, our domestic production is being stepped up accordingly. We do not believe that there will be a soap shortage, even though there is already evidence that certain "ersatz" soaps are coming to market. By "ersatz," we mean in this case soaps where the coconut oil content has been cut to possibly five per cent whereas in the palmy pre-war days it was twenty per cent. But "ersatz" or not, they are still pretty good soaps.

And before he writes soap right off the market, we must confide to Mr. Dietz that the raw materials and the facilities to manufacture his synthetic "ersatz" soaps, even from a raw material supposedly as plentiful as petroleum, are more limited than our fat, oil and chemical supply from which to produce soap. In short, the synthetic detergents are far scarcer than oils, fats and fatty acids for the soap kettle. And in closing, we might also enter on the record that as long as the old U.S.A. needs glycerine like we need it today, there is not going to be a soap shortage, all this "ersatz" talk to the contrary notwithstanding!



COMPARED to what had gone before, the past month has been a comparatively quiet one in and about the soap industry. No further sweeping orders or restrictions have come forward from either W.P.B. or O.P.A. It may be just the calm before the

storm, however, as we hear that the expected order, setting maximum consumption of fats and oils by the soap industry, may not be delayed much longer.



FOR the past six months, the W.P.B. has been working to solve as equitably as possible the container problem of the hour,—steel drums. In addition to the restrictions already in force, it is known that several additional and far more drastic restrictions on the use of steel drums have been considered. The suggestion was considered by W.P.B., except in the case of products on highest priorities, that even used drums in the hands of manufacturers be completely banned for use as well as new drums.

Although the steel drum problem has been kicked around by the W.P.B. for months, something akin to a definite policy may be forthcoming in the near future as far as soap products, disinfectants and other sanitation materials, chemical specialties and the like are concerned. The plan is not new, having been evolved at least three months ago. It entails briefly, two groups of products, A and B, one group being restricted and the other not restricted for shipment in steel. But the important feature for the potash soap, insecticide and allied groups is the lack of restriction on used drums *already on hand*. These may be used and re-used until worn out without restriction. The acquisition of additional new or used drums will be restricted except in the case of materials with preferred listing or high priority.

The fear that all steel containers on hand, new or used, might be frozen at any time has worried manufacturers in the soap and sanitary chemicals industries for some time. And the threat was not an idle one, because this very idea had been considered by W.P.B. several months back. Accordingly, a crystallization of W.P.B. policy as outlined above would be welcome in spite of the handicaps it would entail.

HAND PROTECTIVE CREAMS

By Dr. C. A. Tyler

REMOVAL of deeply imbedded grease and grime from the skin by the use of ordinary toilet soaps is not too successful. Such a cleansing operation requires the application of more heroic measures, usually strongly abrasive soaps. The effect on the skin,—especially to those who are fussy about the appearance of their hands,—from the constant harsh use of strong abrasive soaps is well known. With a wider advent of women in factory jobs as a result of war conditions, a means to circumvent harsh cleaning methods for the hands to which the average male worker has never objected too greatly, has naturally been only a matter of time.

Protective hand creams or "invisible gloves" or "cosmetic gloves" appear to be well on their way to a wider use by factory workers today. The many women now working in defense plants have their own special needs. It is definitely conceded that with women at least, a good appearance plays an important part in morale. Women in factories are just as much interested in keeping their hands looking well as women doing housework, although the latter are the ones to whom the advertisers appeal "to keep their hands soft and feminine." Men, although less interested in appearance, seem to be starting to appreciate the practical point of view that rough hands with abrasions and an over-dry skin are more subject to infection and to dermatitis than would otherwise be the case.

While some plant workers have to wear gloves of one kind or another as a protective measure, the general worker objects to this because of the clumsiness it involves. Without gloves,

most manual labor entails accumulation on the hands of dust, soot and grime. Whether this is greasy in nature or not, the protective film of oil naturally present on the skin is sufficient to pick up a surprising amount of adherent solid dirt. Most of this dirt would of itself do no harm, except for the fact that it gets so deeply imbedded as to penetrate slightly into the skin crevices and pores, becoming exceedingly difficult to wash off. Because of this workers usually resort to harsh cleaning methods such as the use of stiff scrubbing brushes or strongly abrasive or strongly alkaline detergents. It is these cleaning methods that do the main damage, making the skin rough and dry and subject to minor abrasions.

The purpose of a protective hand cream or "cosmetic glove" is to avoid the necessity of drastic cleansing measures by applying the cream before getting the hands dirty. During the last few years, various types of products have been offered, some with special industrial conditions in view. For

instance, where the hands have to be kept in water a great deal, a product with a base of petrolatum has been suggested; latex has even been added to give a rubbery film.¹ For dry work, less greasy preparations containing lanolin or cream bases containing cholesterol and ischolesterol are more suitable. Liquids containing mastic dissolved in acetone, or a synthetic resin, form a continuous dry film on the skin. Advance rubbing with cottonseed oil has been recommended for workers whose hands are exposed to paint or printing inks. Some products are designed to protect the hands from strong acid, others from strong alkali. Conditions should determine the type of product used.

Products for more general use have a greater resemblance to vanishing cream. Unlike vanishing cream, they should carry a soft inert solid substance to fill in the openings to the pores and thus prevent penetration of objectionable foreign matter. De-

¹ Joseph V. Klauder, *Industrial Medicine* 9, 221-31 (1940).

Demand for skin protection increases, especially among women factory workers, to ease the subsequent removal of grease and grime from the hands



sirable properties are that they should be nearly invisible, should form a continuous protective layer over the skin to prevent imbedding of dirt, should not rub off onto the materials or objects being handled, should be free from "rolling,"—that is, should not rub up into small loose rolls of grease and dirt,—should keep the skin from drying out,—and highly important, should be readily removed by ordinary washing with mild soap and water. With an ideal product, the user should not be conscious of its presence after application.

Since dermatologists have become interested in the pH of the skin and of products to be used on it, this may merit some attention. The pH of the outer skin surface, which is mostly dead skin, has been reported by several investigators to be in the neighborhood of 5. This is due to the mildly acid reaction of the fatty material and perspiration exuded by the sebaceous and sweat glands. As we penetrate into the skin, the pH of the successive layers changes until in the

basal cells it becomes 6.8-7.4. It would seem reasonable from this that a cream to be left in contact with the skin should be neither markedly acid nor markedly alkaline, but somewhere near the neutral zone. Many of the creams offered are very slightly on the alkaline side, probably around pH 8-8.5, which is considered quite close to neutrality. At pH 7, the absolute neutral point, a change of one unit in either direction has no significance for most purposes, although a change of one unit at say pH 4 or pH 10, would mean a much greater change in acidity or alkalinity, respectively.

The formulas below illustrate the composition of some types of products which have been developed. (All parts by weight.)

I.	
	Parts
Glyceryl monostearate . . .	10
Stearic acid	3
Amino glycol	0.5
Sorbitol	4
Zinc stearate	12
Water	70
Perfume	0.5

Women workers in war plants account for the new demand for protective hand creams. Hand cleaning methods are changing, say reports from industrial centers. To prevent imbedded grime from marring hand appearance and to facilitate grime removal with mild soaps when the work day is over, women workers are using increased quantities of these creams, sometimes termed "invisible gloves."



Although both of these products are creamy in appearance and both contain glyceryl monostearate as an emulsifying agent, they differ considerably in the other ingredients. The two hydroxyl groups in glyceryl monostearate introduce hydrophylic properties not present in triglycerides even though the monostearate is insoluble in water. In the first formula, stearic acid and amino glycol together constitute a second emulsifying agent. The presence of emulsifying agents is important in two respects; first, to emulsify the fatty ingredients with the water in the product, to give a cream or paste easy to spread, and second to help re-emulsify the dried cream at the time of removal from the hands to increase the ease with which it can be washed off with soap and water. Sorbitol is hygroscopic, so aids in retaining part of the water, most of which evaporates as the cream is rubbed onto the skin. It is also an agent to prevent rolling. Zinc stearate serves as the solid material to prevent penetration of dirt; magnesium stearate is also used for this purpose.

In the second formula the wax serves as an antipenetrant. Lanolin is a soft grease-like coating agent. Sodium silicate is intended to form a protective film and in some products has been the sole agent fulfilling that

II.	
	Parts
Glyceryl monostearate . . .	12
Bleached beeswax	12
Lanolin	7
Sodium silicate solution . .	5
Ammonia water	0.5
Water	63
Perfume	0.5

function. It is, however, strongly alkaline and not viewed with favor for use on most skins.

A commercial product based on sodium silicate which came out a number of years ago, had the following approximate composition.

	Parts
Tallow soap	6
Glycerine	28
Sodium silicate solution...	19
Water	47

The silicate is a siliceous rather than an alkaline silicate, the ratio being $\text{Na}_2\text{O}:\text{SiO}_2$ of 1:2.4. While in dilute aqueous solution the silicate gives a fairly strong alkaline reaction, in concentrated form it becomes more colloidal with a correspondingly lower proportion of hydrolysis. The same is true of soap. This product might not be sufficiently alkaline to be objectionable for certain special uses since both silicate and soap would be in practically solid form after application. Dilution upon removal, however, might develop skin irritation in constant use. Naturally there is always the question of allergy but that is not considered here.

Sorbitol or some of the synthetic ethers may be used to replace glycerine in this type of product. Considering even these three formulas, the amazing thing is that products differing so greatly in composition can have much the same appearance and general nature as a vanishing cream.

When the ingredients are all water-soluble, as is the last formula, it is simply a question of dissolving or dispersing them in water and stirring until a homogeneous cream is obtained. When an emulsion of oil-in-water is to be formed, the fatty materials are melted together, the water-soluble materials dissolved in warm water and added to the melted fat with stirring. Mixing is continued until the homogeneous mass is cool. If inert solid powder is to be added, this is stirred or milled in during the cooling.

A patented material very similar in makeup to that of the last formula contains the following:²

	Parts
Sodium stearate	288
Sodium silicate	906
Glycerine	1155
Water	1600
Limonene	1

²O. McDaniel. U.S. Patent No. 2,021,131.

The following product is said to be sufficiently nongreasy that the user can handle papers without leaving grease marks on them.³

	Parts
Mixture of stearyl and cetyl alcohols.....	10
Similar mixture containing sulfated derivatives.....	2
White mineral oil.....	12
Lanolin, anhydrous	6
Water	70
Perfume .....	..
Preservative .....	..

The first item, a proprietary product, can be replaced by stearyl alcohol if desired, possibly with a small reduction in amount. These alcohols are skin softeners. The second item, also a proprietary product, contains a fatty alcohol sulfate of the Gardinol type and is the emulsifying agent. Mineral oil and lanolin may be considered as coating and spreading agents and emollients, the lanolin being higher in emollient value as it is supposed to be partly absorbed by the skin. Hydrous lanolin can just as well be used as anhydrous provided its water content is allowed for in formulation. Redgrove recommends incorporation of a small amount of methyl-*para*-hydroxy benzoate as a preservative to prevent mold growth. He also recommends a simple light perfume such as rose or lavender. No inert solid being present, the mineral oil is intended to coat the skin and afford protection against penetration.

Two further formulas, the first of the vanishing, the second of the more creamy type, are as follows:

I.	Parts
Stearic acid	15
Cetyl alcohol	1
Triethanolamine	2
Sorbitol	8
Talc	10
Water	64

II.	Parts
Glyceryl monostearate....	20
Glycerine	5
Spermaceti	5
Zinc oxide	10
Water	60

Talc and zinc oxide serve as solid anti-penetrants. Spermaceti, a wax, would also aid this function as a skin coating agent.

Pastes which contain no water

³H. Stanley Redgrove, *Perfumery & Essential Oil Record* 32, 16-17 (1941).

and are much more greasy, being based on petrolatum, are designed for maximum protection such as in handling or working with acids or other water-soluble corrosive materials.

I.	Parts
Petrolatum	50
Zinc oxide	25
Kaolin	25
II.	Parts
Petrolatum	75
Lanolin	3
Mineral oil	12
Triethanolamine	10

In the first formula, kaolin is a soft clay which disperses so readily in water that it may be considered an active dispersing agent. In the second, triethanolamine is incorporated to promote removal of the film during washing. Both of these products would rub off on materials being handled and would have to be renewed from time to time.

For products of the so-called general type, that is one which might be put out for general sale to workers in factories, machine shops, munitions plants, and the like, the following compositions have been suggested. These would be generally suitable to protect the hands from ordinary imbedded grease and shop grime. They may have some value in protection against corrosive substances, but their main purpose is to prevent grime becoming imbedded in the skin.

I.	Parts
Stearic Acid	12
Lanolin	3
Glycerine	6
Potash soap (40%)	5
Magnesium Stearate	10
Water	50

II.	Parts
Stearic Acid	5
Lanolin	5
Soap chips (88%)	8
Magnesium Stearate	10
Glycerine	3
Water	44

In each of the foregoing, the soap is dissolved in warm water and the melted stearic acid and lanolin run in with constant stirring, and the glycerine then added. The magnesium stearate is mixed in with constant stirring and preferably the entire mass milled while still warm. One part of

(Turn to Page 65)



WAR

WITH soap production at record levels over the past year, while at the same time supplies of a number of packaging materials have been sharply reduced or completely cut off, soap makers have faced a number of unfamiliar packaging problems. The situation might well have been a much more serious one, had the threatened paper and paper board shortage really developed, but in spite of the fact that this paper shortage turned out to be more imaginary than real, there have been enough other tight situations to give the soap maker numerous packaging headaches.

Tin and other metals are banned for soap packaging use, after present inventories are used up. Formaldehyde and other protective plastics which substituted for metals in bottle closures are heavily restricted. Cellophane is prohibited after present stocks are exhausted. Paperboard and wrapping paper, on which soapmakers were asked to reduce their purchases 25 per cent from last year's consumption, are not so serious a problem now as they were a few months ago, but economies are proceeding here too, so that the soap industry will be ready if the situation changes again.

Manufacturers of scouring cleansers have suffered most from the

The anticipated shortage of packaging papers and paper boxes has thus far not developed. Fine soaps are still being well packaged and none are going to market "naked" although manufacturers are prepared for the worst if it comes.

ban on metals which came out last February under Order M-81—not because their product could not be packaged without metal, but because the machinery with which the industry was equipped to handle metal could not easily be adjusted for other materials—and new machines were unavailable except to companies who had been able to equip themselves before the shortages became acute.

More than 400 million cans a year are packed by scouring powder manufacturers, almost invariably in the same type package—a spirally bound paperboard wall with tin top and bottom, convenient to the housewife working on wet surfaces. With packages previously in general use the paper shells and tin bottoms were fed into a crimping machine that rolled the edges of the shell to the tin ends to form a perfect seal at the rate of more than 100 cans a minute—a perfectly synchronized operation. As the shell with bottom attached left the crimping machine, it dropped into a belt,

was conveyed to a bin and entered a filling machine. There the tin top, already perforated, was attached. The machine on which those perforations had been done was adjusted to cut almost through the thin sheet of tin, yet not all the way through, then to roll the surface back in place,—again at the rate of more than a hundred a minute. The result was perforations perfectly tight to prevent sifting but flexible enough to be pressed out with a lead pencil point.

Paper tops and bottoms obviously can not be handled in the same way. They are not strong enough and would recoil. New machines are impossible to secure, and the matter of getting equipment even for adjusting present machines to meet the variation in strength seemed almost insurmountable. One company, however, did work out a solution to eliminate 90 per cent of the tin required. Instead of the solid metal end, this company used a paperboard end attached by a metal ring to the wall of the container. New machinery needed to make the combination end was a minor enough requirement to make delivery possible. This container has been on the market for several months. Meanwhile, the company is having a folding paperboard carton developed, similar to the kind used for packaging soap

R PACKAGES for SOAPS

By Marie G. Heuer

flakes, and with a firmly built pouring spout utilizing only paperboard.

In some plants there is talk of selling scouring powder in bulk, but with the paperboard situation considerably easier than it was several months ago, this alternative is still a long way off.

Labels for scouring cleanser cans also present possible future problems. Alkali proof inks have always been preferred on these labels, to accommodate the housewife working with wet hands. With restrictions on tung oil and on some of the pigments that go into soap proof inks, it may be necessary eventually to get along with inks that will not have the accustomed resistance to alkalis. Scouring cleanser labels have normally been lacquered, to give further protection against scouring off, and to give the label brilliance. Today lacquers have war uses and high gloss inks which

would offer an acceptable alternative are unfortunately also subject to close restriction.

The packaging of industrial soaps has been most seriously affected by the War Production Board's "L" order, issued on May 4 and restricting steel drums, barrels and pails. Steel containers already in the hands of manufacturers were not "frozen" by this order,—their use being permitted until worn out. Manufacturers have met this restriction by retaining title to all drums shipped out, for re-use on other orders. To insure speedy return, they have adopted the common practice of billing customers for these drums, with a sum considerably more than the inventory rating, and of cancelling the bill as soon as drums are returned.

Paste soaps and metal polishes are using opal glass jars and clear glass bottles instead of the tin contain-

ers formerly used. The more recent order prohibiting metal for new molds for glass jars or bottles has caused further difficulties. The restrictions on metal caps as well as on plastics are even more serious. Wood and paper caps are being developed, however, which promise to take care of the situation.

So far, the only calls for consumer cooperation on conserving tin for products of the soap industry have been the orders requiring buyers of shaving cream and tooth powder to turn in empty tubes when making new purchases. The shaving tube return order, according to reports, has caused the sale of shaving soaps packed in containers other than tin to step up considerably, and has been a particular boost to manufacturers who have been promoting glass jars for shaving cream. Paperboard containers are being devel-

Glass, wood and paper board are everywhere supplanting metal containers. Much the same trend exists in replacing plastics for containers. Glass will probably supplant the type of plastic shaving soap package shown here. Shave creams, brushless and otherwise, are switching to glass.



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oped for both tooth paste and shaving cream, which may help to relieve the situation somewhat.

In the campaign to conserve metals, the strain on the resources of the glass industry has been considerably lightened by reducing the weight of bottles. One manufacturer of shampoos who reduced bottle weights by about one-third more than three years ago reports that his records show no noticeable difference in breakage, while producing considerable cost reductions in manufacturing and shipping.

The ban on cellophane is the biggest hardship to soap manufacturers, so far as paper is concerned. Fancy soap makers have long depended on transparent wrapping to protect their bars from chipping, as well as to retain the perfume and the moisture of the bar. The favorite wrapping has been No. 300 transparent cellophane, which could be dampened after wrapping to make an extra tight package. Tissue paper or glassine tends to break or tear under such treatment and does not have the brilliance of cellophane. With cellophane no longer available many firms now prefer to put their fancy bars, unwrapped, in set-up boxes, rather than resort to inferior substitute wraps.

Such strict economies have been practiced by moderate and low priced soap manufacturers that so far they have found themselves well within the War Production Board's restrictions. On set up boxes many have gone to lighter weight board. They have cut down on the weight of packages of soap flakes and powders, sometimes as much as four points. Partitions, paddings, and die cut trays are being cut to the minimum size for practicality, if this minimum had not already been reached. Linings, extra flaps and clearances are being eliminated wherever possible.

Inner wrappers, however, have been retained. Their presence, according to several packaging directors interviewed, is important as a backing for the individual bar of soap in the fast assembly line wrapping procedure followed in most plants. On perfumed toilet soaps, the liners help to hold the fragrance, thus giving the consumer a

pleasanter reaction when she opens her package—a distinct sales advantage.

If paper shortages become acute, all bars of soap could be shipped and sold without any wrapping whatever. This has been standard practice on yellow laundry soaps with most firms for many years. The necessity for such a situation is still in the distant future, however. The outlook indicates that brand identification can be retained, and that conservation can be pushed more intelligently through standardization of sizes and styles, to save on labor, time and supplies. The possibilities of such standardization can be indicated by the experience of one firm manufacturing two private brands. Both bars were the same weight, but one was a little longer and a little thinner than the other. This meant shutting down machines when runs were changed, to re-set and make adjustments. Three years ago both bars were standardized to the same size, so that the same size bristol

Paper cans with metal ends, for years standard for scouring powders, find wider war-time use to replace all-metal packages. New line shown here by American Can, lithographed fiber cans produced on the same equipment formerly used for their all-metal containers.



board and inside liners could be used for both bars. Only the soap formulae, names and labels remained individualized. The result was a 10 per cent increase in production with no extra effort and no loss of prestige for either brand.

Soap manufacturers recognize that they have an important part to play in the war production program, and that they can contribute substantially to the war effort. The demand for conservation of packaging materials is forcing them to break in some instances with long established traditions—and has already brought improvements in packages, from appearance and cost angles, that will be likely to be retained after the war is over.

Laboratory treatment of samples of waste from a laundry delivering a maximum of 75,000 gallons per day, with a fair average of 60,000 gallons four days a week, resulted in addition of 360 parts per million of commercial aluminum sulfate and 144 p.p.m. of sulfuric acid. This gave a substantially clear effluent. The value for oxygen consumed of the original waste was reduced more than 90 per cent by the treatment. Foster Dee Snell and J. Mitchell Fain. *Ind. Eng. Chem.* 34, 970-2 (1942).

The TEA-TREE OILS

By Dr. Ernest S. Guenther

Fritzsche Brothers, Inc.

(Part II)

THE popular Australian term "tea trees" includes several species of the genera *Melaleuca*, *Leptospermum*, *Kunzea*, *Baeckea*, and so forth, the most important being *Melaleuca leucadendron* (cajuput), *M. viridiflora* (niaouli), and *M. alternifolia*. The oil distilled from the latter has become known commercially as tea tree oil. There exist other less important species, for instance *M. ericifolia*¹ and *M. linariifolia* (Smith). The oil of the latter has been investigated by Penfold and Morrison.² It is almost identical with that of *Melaleuca alternifolia*, described by the same authors in the afore-mentioned paper.

Oil of *M. alternifolia* has lately attained considerable significance because of its truly remarkable germicidal properties. The present designation "tea-tree" or "ti-tree" oil, under which this oil is marketed, is not quite correct because the vernacular term tea tree comprises many species, while our commercial, so-called "tea-tree" or "ti-tree" oil of high germicidal value is distilled exclusively from *M. alternifolia*. A more correct designation would be "Oil of Tea Tree (*Melaleuca alternifolia*). The name

"ti-tree oil" is equally misleading because the tree known in New Zealand as ti-tree is *Cordyline australis* and has no relation whatsoever to *M. alternifolia*.

M. alternifolia is the "narrow-leaved paper bark tea tree" growing in the swampy regions and following the water courses of the north coast of New South Wales. Some of these sections are so thickly wooded as to be almost impenetrable. *Alternifolia*, even more than other species of its genus, possesses remarkable recuperative power. It cannot be exterminated except by "grubbing out" and is some-

of years. Thus, the marshlands bring returns, even without costly draining or clearing of the swamps. When distilled, the leaves and terminal branchlets yield about 1 to 1.5 per cent, sometimes up to 1.8 per cent, of essential oil. Distillation takes place in field stills of the type generally used for producing Australian eucalyptus oils.

Physical and Chemical Properties

According to Penfold and Morrison,³ the constants of *M. alternifolia* oils vary between the following limits:

Specific Gravity at 15°C.....	0.8950 to 0.9050
Optical Rotation	+6.8° to +9.8°
Refractive Index	1.4760 to 1.4810
Ester Value	2 to 7
Ester Value after Acetylation.....	80 to 90
Cineol Content	Below 10%
Solubility	Soluble in 0.6 to 0.8 volumes of 80% alcohol.

times a source of great annoyance to dairy farmers. When the trees are cut down to two or three feet above ground, succulent shoots ("suckers") appear which, after twelve to eighteen months, form a thick and healthy foliage above the old stumps. It is very easy to cut and gather this new foliage for distilling oil, and the harvesting can be repeated for a number

Samples of pure oils which the writer collected in Australia showed the constants given below.

The properties of Sample "c" were somewhat different from those indicated by Penfold and Morrison. Its high specific gravity might indicate resinification, but the acid value of this oil was only 0.8. Therefore, the

	a	b	c
Specific Gravity at 15°C.....	0.898	0.900	0.920
Optical Rotation	+8°50'	+8°35'	+8°33'
Refractive Index at 20°C.....	1.4788	1.4791	1.4779
Saponification Value	1.9	1.9	2.7
Ester Value after Acetylation.....	65.3	78.4	40.7
Solubility at 20°C.....	Hazy in 10 volumes of 80% alcohol. Soluble in 0.5 volumes and more of 90% alcohol.	Soluble in one volume and more of 90% alcohol.	Hazy in up to 10 volumes of 80% alcohol. Soluble in 0.5 volumes and more of 90% alcohol.

¹"The Occurrence of Linalool in the Essential Oil of *Melaleuca ericifolia*" by Penfold and Morrison, *Journal and Proceedings of the Royal Society of New South Wales*, Vol. LXIX, 1936, pp. 171-173.

²*Journal and Proceedings of the Royal Society of New South Wales*, Vol. LIX, 1926, pp. 306-324.

³*Australian Tea Trees of Economic Value*, Sydney, 1934.

high specific gravity must be attributed to other causes.

Chemical Constitution

Penfold and Morrison⁴ identified in oil of *M. alternifolia* the following constituents:

- d- α -pinene
- α - and δ -terpinene
- cymene
- 6 to 8 per cent of cineol
- Δ^1 -terpinenol-(4)
- sesquiterpenes, mainly cadinene
- sesquiterpene alcohols

Medicinal and Pharmaceutical Properties

The chemical composition of the oil certainly gave no indication of its germicidal properties. It so happened that Penfold and Grant,⁵ while investigating the Rideal-Walker coefficient of Australian essential oils in general and their pure constituents, found for *M. alternifolia* values ranging from 11 to 13. There may be some doubt about these findings, but they did push into the limelight oil of *M. alternifolia* which might otherwise have sunk into oblivion forever. Australian Essential Oils Ltd. continued the work of Penfold and Grant on a practical scale, with the help of medical and dental practitioners. Results not only justified Penfold and Grant's conclusions, which were based merely upon laboratory tests, but went far beyond every anticipation. It was found that the oil itself, as well as its water-soluble emulsion, possesses quite remarkable properties. Although of high germicidal value, the oil is non-toxic and non-irritating, merits which cannot always be claimed for germicides containing carbolic and cresylic acids and analogous derivatives. The oil has the power of penetrating pus and mixing with it in a way which causes it to slough off, leaving thereby a healthy surface. It could never have been foreseen that the harmless non-toxic essential oil could destroy pathogenic bacteria. The germicidal properties of the oil do not seem to depend upon any specific con-

stituent but upon the unique natural blend of several constituents, perhaps upon an unknown compound which so far has not been isolated and identified. It appears that tea tree oils with not more than 3 to 5 per cent of cineol give the best results. In fact, it seems that there exists a physiological form of *M. alternifolia* containing 20 to 40 per cent of cineol in its oil which has relatively very little germicidal value.

The outstanding medicinal and pharmaceutical properties of *M. alternifolia* have been described in the *Medical Journal of Australia*, January 8, 1930. To summarize the conditions which have been successfully treated with this oil, we quote:

"Perionychia, empyema, gynaecological conditions, skin conditions, epidermophyton infection (psoriasis), impetigo contagiosum, pediculosis, ringworm, tinea (albuginea), throat and mouth conditions (acute nasopharyngitis, catarrh, thrush, and 'aphthous' stomatitis, tonsillitis and ulcers of the mouth, sore throat), pyorrhoea, gingivitis, etc."

It would be far beyond the scope of this survey to go into more detail. Suffice it to refer here to Penfold and Morrison's study on the essential oil of *M. alternifolia* which appeared in the *Australasian Journal of Pharmacy*, March 30, 1937, and also a brochure "Medical and Dental Data of Ti-Tree and Melasol," Revised 1936, published by the Australian Essential Oils, Ltd., Sydney, N.S.W.

The physician, surgeon, biologist and pharmacist will derive much interesting material from a study of these papers.

Oil of *Leptospermum Citratum*

As pointed out in the introduction, the designation "tea trees" includes also certain species of the genus *Leptospermum*. Of these, *L. citratum* is without doubt the most important because it lends itself readily to cultivation and gives a good yield of an interesting oil. Penfold and Morrison,⁶ those untiring pioneers in the promotion of Australian essential oils, called attention quite some years ago to this valuable oil, but until now it could not compete with the widely used and low priced oils of citronella

and lemongrass produced in the Indies on a very large scale with the help of cheap coolie labor.

Today the Western Hemisphere is experiencing a fundamental revolution in the supply of essential oils. Most of the former sources in Europe, Africa and the Far East are no longer accessible. Japan is, at present, in possession of the stupendous resources of Malaya and controls the bulk of the world's essential oil production. To keep our domestic industries supplied, the Western Hemisphere must soon produce its own essential oils. Old, established sources, qualities and habits can no longer be considered. It is only logical that we should take advantage now of previous experimental findings which, at one time, could not be translated into practical use because of then existing conditions. Oil of *Leptospermum citratum* is a typical example. Instead of planting in Central and South America large areas of citronella and lemongrass as exclusive sources of citronellal and citral, it seems advisable also to consider the cultivation of such plants as *L. citratum*. The same, of course, holds true of certain eucalyptus species like *E. citriodora*, *E. Macarthuri*, *E. dives* and others, not to forget *Backhousia citriodora*. Oil of *L. citratum* is interesting because, as we shall read in the following pages, it consists mainly of citral and citronellal.

Planting and Cultivating

(Author's Note: See in this connection also "Kenya Leptospermum Citratum Oil," *Perfumery & Essential Oil Record*, June, 1942, pp. 162-164.)

The attractive, lemon scented tea tree of Australia grows wild and sparsely in certain parts of New South Wales and Queensland. The leaf material available from wild-growing trees is insufficient and much too scattered to permit commercial production of the oil. For this purpose, the tree would have to be cultivated which, under suitable conditions, could easily be done. The plant is hardy and grows very rapidly. It thrives in all types of soil but requires access to water and well-drained ground. Like other tea trees, particularly *Melaleuca*

⁶"Australian Tea Trees of Economic Value," Part II, Sydney, 1936

⁴Journal and Proceedings of the Royal Society of New South Wales, Vol. LIX, 1926, p. 318.

⁵Ibid., Vol. LVI, 1922, pp. 219 to 226; Vol. LIX, 1925, pp. 346-350.

alternifolia, it withstands very well the effects of repeated cutting back.

The trees should be planted four feet apart in rows four feet distant. Under favorable conditions, one acre of trees should produce 10,000 pounds of leaf material yearly. The oil is distilled from leaves and terminal branchlets, 100 pounds yielding about 1 to 1.5 pounds of oil. One acre of planted *Leptospermum citratum* yields about 100 to 150 pounds of oil yearly.

Some care must be exercised when germinating the seed. Penfold and Morrison⁶ state that the seeds germinate quite readily, provided the following conditions are strictly observed:

- 1) The seeds should be lightly sown in a shallow seed box and covered with the smallest possible quantity of sand.
- 2) The whole must be kept moist until germination takes place and retained in that condition until the young plants are about 1½ inches to 2 inches in height.
- 3) The young plants should be transferred from the seed box and potted; when 6 inches high, they should be planted in the selected area, 4 feet apart in rows similarly spaced.

The same authors also mention numerous examples of experimental cultivation, as undertaken by individual growers and by the Queensland Forest Service.

Physical and Chemical Properties

According to Penfold and Morrison,⁶ the constants of Oil of *Leptospermum citratum* vary between the following limits:

Specific Gravity at 15°C.....	0.8792 to 0.8856
Optical Rotation	+3.5° to +5°
Refractive Index at 20°C.....	1.4688 to 1.4757
Solubility	Soluble in 1 to 1.2 volumes of 70% alcohol.
Content of Total Aldehydes (Citral and Citronellal)	75 to 85%

The aldehydes, according to the same authors, consist chiefly of citral (45 to 50 per cent) and citronellal (35 per cent). The balance of the oil contains the alcohols geraniol and citronellol, their formic and acetic acid esters, sesquiterpenes, sesquiterpene

Recently the oil has also been produced on an experimental scale in Eastern Java, not far from Sourabaya.

Specific Gravity at 15°C.....	0.898
Optical Rotation	+2°25'
Refractive Index at 20°C.....	1.4789
Acid Value.....	5.6
Total Aldehyde Content calculated as Citronellal (Hydroxylamine Method)	62.4%
Solubility at 20°C.....	Soluble in 1 volume of 80% alcohol; cloudy in 2.5 volumes and more.

The constants of these oils do not quite coincide with those established by Penfold and Morrison. Their relatively high acid value and specific gravity, and low aldehyde content

Specific Gravity at 15°C.....	0.925
Optical Rotation	+2°26'
Refractive Index at 20°C.....	1.4767
Acid Value	18.2
Content of Aldehydes calculated as Citronellal (Hydroxylamine Method)	53.5%
Solubility	Soluble in one volume and more of 80% alcohol. Not clearly soluble in 70% alcohol up to 10 volumes.

The Reports of Schimmel and Company of 1939 mention an oil of

Specific Gravity at 15°C.....	0.9081
Optical Rotation	+2°50'
Refractive Index at 20°C.....	1.47838
Total Aldehyde Content.....	72% (They consist of citral and citronellal in about equal parts.)
Total Geraniol Content (by Acetylation)	83.9%
Solubility	Soluble in 1.2 volumes and more of 80% alcohol; opalescent with more.

Two samples, collected by the writer in Australia and Java, showed the following constants:

Australian Oil	Java Oil
0.898	0.908
+2°25'	+2°10'
1.4789	1.4800
5.6	8.4
62.4%	62.8%
Soluble in 1 volume of 80% alcohol; cloudy in 2.5 volumes and more.	Not clearly soluble in 70% alcohol up to 10 volumes; soluble in 1 volume of 80% alcohol, cloudy in 3 volumes and more.

seem to permit the conclusion that the oil is affected by age and easily resinifies. For example, an older sample given to the writer by Mr. Penfold showed the following constants:

tappel (hydroxylamine hydrochloride) is advised by Penfold and Morrison⁶ for determining the total aldehyde content of oil of *L. citratum*. The citral content may best be determined by separating this aldehyde from citronellal and from the non-carbonyl compounds by the classical method of Tiemann.⁷

When storing this oil care must be taken to keep it in well filled containers and in a cool place.

⁶ Ibid.
⁷ Ber. 32, 412 (1899).



The story behind the

Radio also did its part in publicizing the Fat Salvage Plan. Claire Wilson was among those who appealed to the housewife to save her waste fats.

TWO billion pounds of cooking fats are "wasted" by American housewives every year. At least, this is the estimate of the amount of "used" fats which find their way to the garbage pails of the nation. It is equal to the total tonnage of oils and fats used in all the soap kettles of America. In view of America's tremendous potentialities as a fat and oil producer, and the plentiful supplies of oils available for import prior to the war, this "waste" was never considered very seriously. But it took a war and the scare of inadequate fats to meet the glycerine needs of the country to drive home the idea that an appreciable portion of this fat might be salvaged. Even if ten per cent could be recovered, it would make a welcome addition to aid in replacing heretofore imported oils. With salvage of rubber and metals already under way, this thought was developed into what is now the nation-wide fat salvage plan.

The germ of the fat salvage effort is reported to have come from Thomas E. Wilson of Chicago shortly after Pearl Harbor. The War had cut off our supply of vegetable oils from the Far East, reasoned Mr. Wilson,

chairman of the board of the packing firm bearing his name, and therefore, it was imperative that this curtailed supply be supplemented. How? By utilizing the "waste" kitchen fats that are normally thrown away by housewives. The same morning, so the story goes, Mr. Wilson conferred with Mayor Kelley of Chicago and that day rounded up representatives of local renderers, retail food chains, the Association of Meat Dealers, the American Meat Institute and others to devise a plan.

The W.P.B.'s local Bureau of Industrial Conservation lined up Chicago's air raid block captains thus gaining the double-barrel support and authority of those two national war agencies: the W.P.B. and the O.C.D., and at the same time enlisted their support for the future nation-wide organizational structure of the plan. The red letter day in the early history of the campaign was January 16, 1942. On that day, in 1,000 line advertisements in all the Chicago daily papers, the public was given its first "look-see." In large type, and with the directness and authority of a large calibre pistol pointed at the fair sex, the question was neatly phrased:

"Women of Chicago . . . Will You Help To Avenge Pearl Harbor And Win The War?" Like the choice offered the groom at a shotgun wedding when asked if he cared to take the bride as his lawfully wedded wife, the reply obviously had to be "yes." However, stern phraseology seemed to get nowhere with the women of Chicago judging by the first week's response in grease collections. For, when the results were in, an infinitesimal 300 pounds of so-called waste fats had been contributed. The girls are doing better now in the national effort it must be reported in fairness to them and reliable estimates put the figure at 125,000 pounds collected during the week ending June 20, and the movement seems to be still growing. The quality of the fat was reported to be very high and one renderer said "an analysis of composite samples of kitchen greases collected . . . shows free fatty acids .92—this is remarkably low and will produce the maximum glycerine yield."

The one bright spot in the early days of the Chicago fats salvage plan was a suburban newspaper woman named Mrs. Walter Kelley,—no relation to the Mayor. She took the drive

FAT SALVAGE PLAN

seriously from the beginning and is given large credit for its initial success. She did such a good job that when it became a nation-wide project, she was brought to New York by the advertising agency handling the campaign. Now she "peps-up" the plan on a nation-wide rather than city-wide basis.

In addition to Mrs. Kelley's efforts in Chicago, the press and radio there voluntarily publicized the campaign. As a result, word got out to the rest of the country via the publicity route and finally came to the attention of the Washington headquarters of the Bureau of Industrial Conservation. There the plan created a favorable reaction. As a result, the idea of the salvage plan on a national scale was conceived. But while the War Production Board approved the plan and felt that it was important

to undertake fats salvaging at once, it could not, under government policy, supply the advertising. The industries affected must provide that.

So, faced with the possibility of a reduced fat supply that might be further cut by demands from our allies,—with oils from the Pacific shut off, and bottoms extremely scarce to carry oils to the United States from other producing areas of the world,—it was obvious that American glycerine and soap producers should give closer attention to making more complete use of available domestic fats, including the millions of pounds wasted every year by American housewives. To this end, the nation-wide publicity and advertising campaign was developed.

On April 18, an appeal to soap and glycerine producers and associated industries was sent out outlining the

cost and plan of a publicity and advertising campaign designed to do the job. It was estimated that the cost would be \$490,000, but at "regular rates" would have run to around \$900,000. The difference was figured on free space, free radio time, and other free or low-cost contributions. To raise the needed amount, each producer was asked to contribute 1/6 of one per cent of his 1941 sales. In other words, if sales came to \$10,000, the self-assessment would be \$16.67, etc. Twin pledges of support for the National-Fat Salvage Campaign were mailed, one to be signed and returned by the pledgee, the other to be kept for the soaper's records. This was handled entirely confidentially. In a week, 68 companies had pledged support. By the time Association Secretary, Roscoe Edlund, reached

(Turn to Page 67)

WANTED
Waste Fats
for Explosives

BRING US
WASTE FATS FOR
EXPLOSIVES

OFFICIAL FAT COLLECTION STATION
Bring Us Waste Fats For Explosives

Housewives!
SAVE
WASTE
FATS
FOR
EXPLOSIVES!

BRING WASTE FATS HERE

OFFICIAL FAT COLLECTION STATION

Take them to your meat dealer

WAR PRODUCTION BOARD

New Products

...

and



A new, one gallon glass jug type container is being introduced by Shawmut Specialty Co., Boston, for their floor wax which was formerly packed in tin. The new container is by Anchor-Hocking.

Shulton, Inc., New York, has just brought out a refill for its familiar Old Spice shave mug that retails for 65c.



Hewitt Soap Co., Dayton, Ohio, is now showing this new super-fatted lanolin soap: Formula 333, especially suited for dry skins. Comes packed six cakes to box to retail for 50c.

and Packages



This new Christmas gift box of Shulton's, in the early American motif, resembles an old fashioned trunk. Soap, sachet, toilet water and atomizer make up the contents. The box retails at \$3.

Roger & Gallet, New York, have adopted this new type container for their Aftabath dusting powders: "Blue Carnation, Night of Delight and Fleurs D'Amour." Carton by Robert Gair Co.



"Swerl" is a new soapless detergent being distributed by H. Z. Heinz Co. of "57 Variety" fame. Test advertising is currently being run on behalf of this newest addition to the Heinz line.

RAW MATERIALS

FOR THE SOAP AND ALLIED INDUSTRIES

ANIMAL OILS, FATS, CHEMICALS, VEGETABLE OILS

DRUMS — TANK CARS — TANK WAGONS

Every raw material necessary for the manufacture of soap and allied products is carried in stock and is available at the right price for immediate delivery to your door.

PALMITIC ACID

90-95% Pure White,
High Melting Point

ALCOHOL
AMMONIA
BLEACHING POWDER
BORAX
BICARBONATE OF SODA
CARBON TETRACHLORIDE
CALCIUM CHLORIDE
CAUSTIC SODA
CAUSTIC POTASH
DYES
DISODIUM PHOSPHATE
GLAUBER'S SALTS
GLYCERINE
METASILICATE
OXALIC ACID
POTASSIUM CARBONATE
SAL AMMONIAC
SALT
SAL SODA
SILICATE OF SODA
SODA ASH
TRISODIUM PHOSPHATE

GLISYN

Inquiries solicited on this low
price glycerine replacement.

CASTOR OIL
COCOANUT OIL
CORN OIL
COTTONSEED OIL
LARD OIL
NEATSFOOT OIL
OLEIC ACID - RED OIL
OLIVE OIL
OLIVE OIL FOOTS
PALM OIL
PALM KERNEL OIL
PEANUT OIL
RAPESEED OIL
ROSIN
SALAD OIL
SOYA BEAN OIL
SESAME OIL
TEASEED OIL
WHITE OLEINE
FATTY ACID
STEARINE
STEARIC ACID
GREASE
TALLOW

Telephone: MOremore 6-4870. Direct New York
Tel: CHickering 4-7533.
Members New York Produce Exchange.

COCOANUT OIL

CAUSTIC POTASH

STEARIC ACID

CAUSTIC SODA

RED OIL

TALLOW



EASTERN INDUSTRIES, INC.

RIDGEFIELD, N. J.

NEWS

Soap Plant For Camp

A soap manufacturing plant that will utilize thousands of pounds of waste fat will be built at Barriefield military camp, Kingston, Ontario, Canadian officials announced recently. Soap has been made from waste fat in the past, but the new plant will incorporate more improved time-saving equipment. Ten thousand meals are served daily at the camp and Lieutenant M. Berg, the mess officer, said that one ton of soap is being made monthly from inedible fats.

Cuyahoga Executive Dies

George John Splittorf, former executive of Cuyahoga Rendering & Soap Co., Cleveland, died August 8, in San Mateo, California, where he had lived since his retirement from active participation in business five years ago. He was 58 years old. Mr. Splittorf was associated with Cuyahoga for 19 years, rising to become general manager and treasurer. He is survived by his wife, Mrs. Florence Splittorf, a daughter, Mrs. Lois M. Hoover, of Seattle, Washington, two sons, George, Jr. and Richard C., both of San Mateo and a brother and three sisters.

Mundheim Joins Air Corps

Marshall Mundheim, head of Antoine of Paris, Jacquet and Lightfoot Schultz companies, all of New York, has been commissioned a first lieutenant in the U. S. Army Air Corps, and is now stationed at Miami, Florida, where he is undergoing a six weeks' course in officer's training. Lt. Mundheim is 35 years old, married and has two children. Before joining Jacquet, Antoine and Lightfoot Schultz companies nearly ten years ago, he was merchandise manager at Stern Brothers, New York, department store. In his absence, Mr. Mundheim's duties will

be taken over by A. J. Caldwell and B. L. Marks, who have been with these enterprises many years. Mr.



LIEUT. MARSHALL MUNDHEIM

Caldwell has been production manager of all three companies and Mr. Marks has been the sales manager of Lightfoot Schultz Company.

New Auto Cleaner Line

Transmotive Laboratories has been organized in Chicago for the manufacture and distribution of cleaning compounds for the automotive trade. Topping the list of products placed on the market since May is "Lustre Wash" concentrate, described as a combination of neutral, synthetic, foam-producing detergents, applied by a spray gun, and requiring no sponge or chamois. Another item is "Lustre Wash" polish, a neutral chemical rust remover and polish, containing eight ingredients for treating chrome trimming on motor cars. Completing the list, is "Lustre Chrome Seal," this being a clear oil base liquid coating for chrome to prevent rust between washes. The new company is headed by S. L. Davis. Offices are at 2550 S. Michigan Ave.

Holbrook Soap Plant Sold

Advance Solvents & Chemical Corp., New York, has purchased the plant of the Holbrook Manufacturing Co. at Jersey City. The Holbrook Co. which has manufactured chip and other bulk soaps mostly for the textile and industrial trades for many years has been dissolved. Advance Solvents purchased the plant from a realty subsidiary of the Hudson County National Bank, Jersey City, owners of the property. They will re-equip the plant and manufacture a line of chemical specialty products including a number of new rubber-like resins, synthetic rubber plasticizers, mould prevention products, and others. A. L. Mullaly of Advance Solvents will direct the affairs of the new plant assisted by his son, A. B. Mullaly. Plant operations of Advance Solvents at Newark and New York will be consolidated in the new Jersey City plant. J. S. McIntosh has been general manager of the Holbrook Manufacturing Co. for the past twenty years. He plans to make a new connection in the soap industry, as yet unannounced.

Rosenthal Joins The Marines

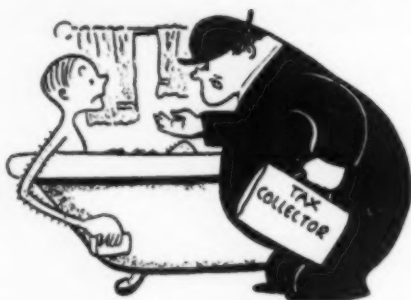
Matthew A. Rosenthal, general manager of Rode, Ltd., manufacturers of shampoos reported for service with the U.S. Marine Corps at Quantico Marine Base on August 19th. Mr. Rosenthal was a reserve officer and is entering the service with the rank of captain.

Expand "White Sail" Line

The Great Atlantic & Pacific Tea Co. has added another product to its private label group of "White Sail" soaps and household cleaners. The new item, "White Sail" yellow laundry soap was introduced in Chicago, last month.

REMEMBER?

10 YEARS AGO



SOAPERS WERE MAKING ADJUSTMENTS TO MEET THE NEW 10% TAX ON TOILET ARTICLES AND THE 5% TAX ON TOILET SOAP AND SHAMPOO



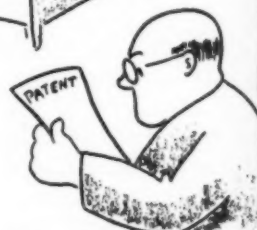
DRIED LOCUSTS WERE BOUGHT BY A FRENCH MANUFACTURER FOR THEIR FAT CONTENT



1,000,000 LB. OF LAUNDRY SOAP WERE CONTRACTED FOR BY BROOKLYN QUARTERMASTER

NEVER MIND THE SOAP, HILDA, I'VE FOUND MY NEW SHAMPOO CLOTH

A NEW SOAP-IMPREGNATED CLOTH WITH GOOD LATHERING PROPERTIES WAS BEING DEVELOPED BY A NEW YORK FIRM



PATENT RIGHTS FOR MAKING NON-SOAP DETERGENTS, ACQUIRED BY A LEADING AMERICAN SOAPER, MAY REVOLUTIONIZE THIS PHASE OF INDUSTRY



DR. JULIUS SCHALL, GERMAN SOAP EXPERT, ARRIVES IN U.S. TO INTRODUCE NEW MANUFACTURING PROCESS

NO PRIORITY POWDERED ALUMINUM WAS RECOMMENDED FOR USE IN FLOATING SOAP IN A EUROPEAN PATENT

"DEMOCRATIC SOAP" TO "CLEAN UP AMERICA" WAS PROMOTED TO HELP ELECT FDR TO HIS FIRST TERM



Soapers Confer With FTC On Colorfastness

REPRESENTATIVES of the soap association and laundry soap manufacturers were present in Washington on August 18th, at a preliminary hearing of the Federal Trade Commission's proposed trade practice rulings relating to the colorfastness of textiles. These proposed rules, made public August 5, would require the grading of the colorfastness of textiles under certain conditions, one of which was washability. It is this phase of the proposed rulings in which the laundry soap makers are particularly interested. The meeting in Washington, at which a hearing was given the suggestions, objections and views of persons interested and affected by these rulings, was the outgrowth of a similar meeting in New York at an earlier date. A final hearing will take place in New York on September 9.

The expressed purpose of the ruling is twofold: (1) To let the consumer know exactly what to expect of the textile she is about to buy; eliminate "deceptive practices"; and show how to truthfully market goods to aid informed buying and "fair competition"; (2) To protect industry, trade and consuming public in time of war when dye conservation brings about increased use of substitutes and changes in service and quality of goods.

How this is to be accomplished is by subjecting goods to various prescribed tests; grading and tagging them accordingly. In the case of colorfastness to washing, "truthful and effective washing instructions which will point out the conditions in washing which should be avoided as harmful and which will aid the consumer to receive maximum service from the product" will accompany the colorfastness designations. The prescribed test for colorfastness to washing will be one of four numbered "test procedures" for cottons and linens in

Section VIII of Commercial Standard CS59-41, or revised and approved tests of equal or greater severity. Although such tests as specified in CS59-41 related to cottons and linens only, they will also be applicable to all types of textiles.

At the August 18th hearing considerable opposition to the proposed trade practices rulings was expressed by fabric and color makers. One large soap manufacturer expressed the opinion that the trade practices if adopted would result in confusion to the consumer as to what is washable. Only a small percentage of all fabrics would be permitted as "washable" or "tubbable" under the proposed grade "A". It was also pointed out that

Milwaukee Soapmakers Meet

A gathering of Milwaukee Soapmakers was held September 3—the affair being the second annual gathering and the continuation of what now promises to be a regular annual event. Moving spirits behind the affair were Emil Bronner and Roy Wilson of Allen B. Wisley Co.

Hall Leaves Wisley

Frank Hall, formerly on the sales staff of the Allen B. Wisley Co., Chicago, has taken a job as mathematics instructor at an Army School for Signaling.

Rosett Reports on Canada

Louis A. Rosett, president of Florasynth Laboratories, Inc., New York manufacturers of perfuming and flavoring materials, recently returned from a trip through Canada and Northern New York State, reported that in spite of the war and uncertain conditions in the Dominion, the outlook for fall business is extremely good and the present pace of business there is brisk. While in Canada, he visited

there might be a shortage of soap required to meet prescribed tests for Grade A, B, C, and D, grades, and to replace soaps now widely accepted for household washing which represents some 90 per cent of all washing of fabrics. As a result of the adoption of these rules, there would be an increased cost to consumer of both fabrics and soap for washing. Another objection was that in framing the proposed trade practices the FTC had completely ignored work along these same lines by the Federal Bureau of Standards and the American Standards Association. This latter organization has recently received a contract from the W.P.B. and the O.P.A. jointly at \$90,000 per year to investigate and recommend emergency standards for the duration.

In advance of the September 9th hearing in New York, the laundry soap makers met at the soap association offices on September 1, to study the effect of the proposed trade practices on the soap industry.

the Florasynth branches in Montreal and Toronto. Accompanied by Mrs. Rosett, he stopped off en route to Canada for several fishing trips in and around the Thousand Islands, doing most of their fishing out of Connaquoque.

Soap In Survey

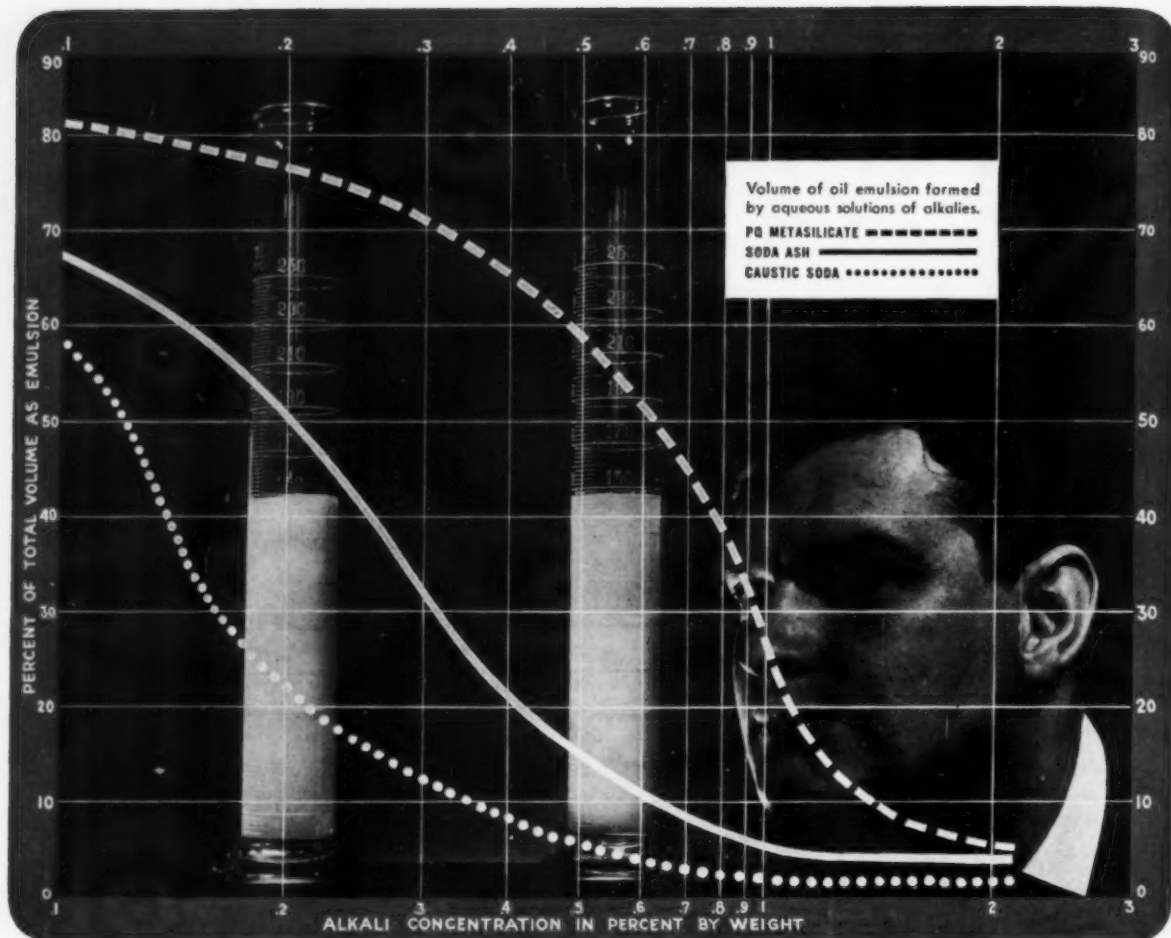
A number of soap and cleanser classifications are among the 98 cost-of-living commodities being surveyed jointly by the OPA and the Bureau of Labor Statistics in a sample poll of grocer operations in 56 cities.

Gov't Soap Purchases Up

July purchases of laundry soap by the Agricultural Marketing Administration were more than five times as great as all purchases since March 15, 1941. The figure given out by the A.M.A. was 16,532,000 pounds, principally for lend-lease. Previous purchases totalled 3,290,000 pounds.

Wisley Picnic September 13

Employees of Allen B. Wisley Co., Chicago, will hold their annual employee's outing on September 13.



*How SiO₂
Aids Cleaning*

PQ Silicates—Quick Emulsifiers

Soaps, whether they be basically stearate or oleate, and PQ Silicates are inseparable partners. Just one of the several reasons why PQ Silicates are preferred ingredients—the oily films are more quickly broken up and distributed in the cleaning solution.

A comparison with common alkalis repeatedly has shown the superior performance of PQ Silicates; the distinguishing component, soluble silica, has a fundamental effect in hastening emulsification. See chart above.

In this demonstration, solutions were made containing from 0.1 to 2 percent of NaOH, $\text{Na}_2\text{SiO}_3 \cdot 5\text{H}_2\text{O}$ and Na_2CO_3 . 75 cc. of each solution was stirred with 75 cc. of light motor oil for 5 minutes at 20° C. The mixture was poured into a bottle and the depth of the oil emulsion and the aqueous layers measured after 24 hours.

The other valuable properties of PQ Silicates are described in our Detergency Series of bulletins, mailed to you on request.



PHILADELPHIA QUARTZ CO.

SILICATES OF SODA

125 S. THIRD STREET, PHILA., PA.

Cut British Army's Soap

The soap ration for men and women in the British forces has been cut in half, according to a recent report reaching us from London. From now on, one soap coupon will be issued every two weeks instead of one a week, which has been the issue to the Forces since soap rationing began. The value of the coupon remains unchanged: it enables the holder to buy 3 ounces of toilet soap or soap flakes, or 4 ounces of hard soap. The reduction has been made by the service departments at the request of the Ministry of Food. Investigation showed that the original allowance was more than sufficient to meet individual requirements. In the new plan, officers' and sergeants' messes will be able to draw additional supplies of soap for communal use in the messes.

Lever Wins Safety Award

The Baltimore branch of Lever Brothers Co. won a six months' safety contest sponsored by the Baltimore Safety Council by operating more than 641,514 man hours without a disabling injury. Lever Bros. achieved the best record of all plants operating more than 400,000 man hours and were awarded the major certificate at a luncheon meeting conducted by the council August 17, at the Emerson Hotel, Baltimore. During the competition, which started January 1, the employees of all participating plants worked a total of 86 million hours.

P&G Employees Hold Outing

Profit-sharing dividends amounting to \$242,143 for the six-month period ending June 30 were paid to Procter & Gamble Co. employees, who celebrated the 110th semi-annual distribution at Coney Island on August 1. In the previous six months dividends amounted to \$223,818. More than 7,500 employees own approximately 175,000 shares of common stock valued at about \$8,500,000.

Employees and their families, numbering more than 10,000, participated in the outing, which was featured by athletic events and an entertainment program. Fred A. Brown, superintendent at the Ivory-

dale plant, was general chairman for the day. On the program committee with him were: W. Ackley, I. J. Birni, W. W. Blaesi, H. S. Brutton, R. B. Collins, C. W. Cook, T. S. Eagan, C. J. Fahnle, R. Oliver, J. Robinson, W. L. Romney, W. M. Ramsey, W. N. Pendery, L. E. Strube, R. R. Thompson and L. B. Zimmerman.

Urge Caustic Stocking

Unlimited storage by industrial users of caustic soda and soda ash was sanctioned by the W.P.B. on August 3, as provided in Amendment No. 4 to general inventory order M-161. Increasing supplies of these materials, making advisable wide distribution now against future demand was given as the reason.

Soap Wage Payments Gain

Average weekly earnings in the soap industry were reported as \$36.59 for the month of June, 1942, by the U. S. Dept. of Labor. This represents a per centage increase of 3.0 over May, 1942, and 12.3 over June, 1941. Average hours worked per week also showed an increase to 41.6 over 41.0 worked in May. The percentage increase above May is 1.5 and from June, 1941, is 1.3. Average hourly earnings were 87.9c. This is an increase of 1.5 over May, 1942, and 10.9 over June 1941.

Canada Revises Soap Order

According to the Canadian Financial Post, last March, the Wartime Prices and Trade Board applied maximum wholesale prices on soap in order that retailers would be assured of replacement costs. Subsidies were paid manufacturers in certain lines to maintain the reduction involved. However, the thing was not quite as simple as that. Traditional buying policies throughout the industry were upset. Industrial users found that they could buy cheaper from wholesalers than from their usual sources. So to restore the situation the Wartime Prices Board has revised the order omitting liquid, granulated and other largely industrial soaps from the special arrangements.

New Laundry Soap Specs

The Procurement Division of the U. S. Treasury Department has issued new specifications for laundry soap, chip, rosin-type (P-S-581) and for laundry soap granulated, rosin-type (P-S-583). Both specifications are to be effective by December 1, 1942, but may be put into effect at an earlier date. Copies of the new specifications are available from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C., at 5c each.

Three 50-year-old printing presses at the Jersey City plant of Colgate-Palmolive-Peet Co.—like the one shown here—yielded 10 tons of scrap for the nationwide salvage drive. Chief master mechanic Edward Otacka marks the first machine with "scrap" label as William Hulsizer, C-P-P production supervisor looks on.





AROMATICS FOR SOAP
BY ALBERT VERLEY & COMPANY

Maintain your sales
appeal at lower cost . . . with

Lavender Artificial "V"
Spike Lavender Artificial "V"

The fate of the Lavender fields in Europe no longer is of critical importance to your business, when you discover that you can successfully replace the natural products, in whole or in part, with these beautiful similes. Years of research have brought these artificial products to a peak of near-perfection. • The source of supply is safe — entirely within the United States. The prices are moderate — well within your means. The results are satisfactory to your most discriminating clientele. • It pays you to investigate these modern developments in soap odors.

Write for working samples and prices.

ALBERT VERLEY & COMPANY *Aromatics*
232 E. OHIO ST., CHICAGO, ILL. • 114 E. 25th ST., NEW YORK
MEFFORD CHEMICAL COMPANY, LOS ANGELES

SCARCE NATURAL
MATERIALS ON HAND
... AVAILABLE FOR
IMMEDIATE DELIVERY
We still have stocks of some
of the natural essential
oils commonly used in soap-
making . . . Write
for working samples and prices.

Monsanto Advances Williams

Victor E. Williams has been made director of sales of the Organic Chemicals Division of the Monsanto



VICTOR E. WILLIAMS

Chemical Co., according to an announcement by Julius A. Berninghaus, general manager of the division. Mr. Williams was formerly assistant general manager of sales of the Organic Chemicals Division. At the same time, Fred C. Renner, last year transferred from the Merrimac Division at Boston to St. Louis, was made general manager of sales of the Organic Chemicals Division. Mr. Williams' headquarters

will continue in New York where he has been located for the past eighteen years while Mr. Renner will be located in St. Louis. The Organic Chemicals Division of Monsanto embraces paradichlorobenzene, methyl salicylate, coumarin, vanillin, intermediates, pharmaceutical chemicals etc.

Mr. Williams joined Monsanto in 1915 as office boy to John F. Queeny, Monsanto founder. Mr. Renner joined Monsanto in 1923 upon his graduation from Washington University, and from 1929 to 1938 was in the Merrimac Division at Boston.



FRED C. RENNER

Karrh Joins Westvaco

John H. Karrh, formerly New York sales manager for Victor Chemical Works, has joined the sales divi-



JOHN H. KARRH

sion of Westvaco Chlorine Products Corp., New York. He was associated with Victor for eleven years and had been New York sales manager for the past four. A chemical engineering graduate of the University of Alabama, he was previously foreign technical representative of Swann Chemical Co., Birmingham, in the installation of its processes in European chemical plants.

Barney Atlas Dies

Barney Atlas, well known to the beauty and barber supply trades for more than 15 years and for the last two years manager of the beauty department of Lightfoot Schultz Co., New York, died suddenly at his home in Philadelphia, Monday, August 10. He was 39 years old. Prior to his joining Lightfoot Schultz, he was associated with J. Eavenson & Sons, Camden, N. J.

P. & G. Earnings Drop

Procter & Gamble Co. stockholders annual report on August 6 showed consolidated net profit of \$21,469,214 for the fiscal year ended June 30, equal to \$3.26 a share on the common stock. However, if the provision imposing \$2,500,000 additional taxation is not finally approved in the Federal tax law, earnings will be increased to \$23,969,214, or \$3.65 a common share. In the preceding

year net profit was \$27,582,081, or \$4.21 a share.

President Richard R. Deupree's report showed that, for the first time, the company's operations in the Philippine Islands are omitted. Previously, accounts of English, Canadian and Java subsidiaries had been excluded because of the war situation. The report said that: "The entire personnel which had been sent to our Javanese plant at Soerebaja is safely back in this country. The plant in Java is probably severely damaged." Company properties in the Philippines, at Manila and Cebu, were reported in Japanese hands. The three plants in England are continuing regular operations, and conditions in Canada were reported as excellent. Operation of the shell-loading plant at Milan, Tenn. was reported as "most satisfactory."

Volume of consolidated net sales the last fiscal year increased over 4 per cent in tonnage; measured in

dollar volume, this shows an increase from \$225,116,299 to \$282,202,502; there was an automatic increase in cost of goods sold due to higher price levels of raw materials.

Provisions for all Federal profits and excess taxes were increased from \$9,861,991 to \$14,559,948. Balance Sheet on June 30 listed current assets of \$106,263,971 and current liabilities of \$32,779,556, comparing with the previous year's figures of \$90,887,132 and \$20,306,847 respectively. The earned surplus account was increased from \$84,421,943 to \$90,066,859.

H. K. Porter Gets E Award

H. K. Porter Co., manufacturer of process equipment, Pittsburgh, was recently awarded the joint Army-Navy E Pennant in recognition of high achievement in the production of war equipment. Besides process equipment, Porter makes special ordnance material.

BACKGROUND VALUES... a PART of the product, APART from the price



*I*T'S important to buyers to know the answer to: *What happens to an essential oil once it enters the Fritzsche plant?* We say this because what *does* happen to these oils and aromatic chemicals has a very direct bearing on the quality, economy and ultimate satisfaction that derives from their purchases of our products. So, here's the story:

Immediately a shipment reaches our New York Receiving Department, whether of our own manufacture or from outside sources, each container is unsealed and the contents sampled. These samples are sent to our Control Laboratories where they are analyzed and carefully checked against standard control specimens. Before final acceptance for use in compounding or for sale, they undergo anywhere from six to a dozen or more rigid inspections and tests. If the samples are found to meet all specifications, the shipment is bulked, thoroughly cleaned by centrifuging and stored in huge glass lined tanks in an atmosphere ideally regulated for storage.

From here on, our aim is to see that these strictly pure but delicate oils and aromatics reach our customers in perfect condition to give the best possible value for their money. To insure this requires scrupulous cleanliness and care in handling. All containers are thoroughly cleansed by washing and steaming. Then, orders are filled in our air conditioned Sub-Division Laboratory where hundreds of different items are carefully weighed, packaged and labeled each day. A special tamper-proof top—an exclusive feature of our packaging—gives final protection to the contents of every bottle bearing our name. Efficient packing sends each order from our Shipping Department quickly and safely toward its destination,—in most cases, the same day the order is received.

It costs the buyer no more to avail his company the advantages of outstanding quality plus prompt, accurate, efficient service, as these are all a PART of Fritzsche products, APART from their price!



FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS: BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT ELDTON, N. J. AND BILLERS (VARI) FRANCE



ACS To Meet Oct. 7, 8 and 9

The American Oil Chemists Society has scheduled its annual fall meeting for Oct. 7, 8, and 9, at the Drake Hotel, Chicago. Dr. J. J. Volterlsen, of Armour & Co., general program chairman, announced however, that conditions later may warrant a shorter, two-day program on Oct. 7 and 8 only.

Technical problems of soap chemistry will occupy attention at the opening meeting, Wednesday morning, Oct. 7. Dr. M. Mattikow, of Refining, Inc., is scheduled for a paper on "Glycerine Recovery With Consideration of End Products of the Breakdown of Glycerine During Recovery." Other topics tentatively scheduled for the soap session will be handled by representatives of Colgate-Palmolive-Peet Co., Lever Bros. Co. and Swift & Co., although definite arrangements were not completed at press time.

In the fats and oils sessions a paper with a bearing on soap will be presented by R. H. Hastings, of West Virginia Pulp & Paper Co., whose topic is "Wijs Iodine Number and the Determination of Tall Oils." "Saturated Acids of Japan Wax" will be discussed by Dr. H. A. Schuette and R. M. Christensen of the University of Wisconsin, while other technical topics are to be added to the program. Numerous committees are working to complete convention arrangements under the direction of H. S. Mitchell of Swift & Co., president of the Society.

Soap Injury Rate Up

Among soap makers, Lever Brothers' Hammond, Indiana, plant had the best all-time no-injury record in 1941, according to a recent report of accident rates in the chemical industry as compiled by the National Safety Council of Chicago. Lever Brothers' Hammond factory worked 3,196,335 man-hours without a "disabling injury." In general, however, the industry record of frequency and severity of injuries showed an upward trend. Of 37 units reporting, the 1941 frequency rate (number of reportable injuries per million hours of exposure) stood at 13.14, or a plus 17 per cent

change over 1940. The severity rate (the number of days lost as the result of reportable injuries per 1,000 man-hours exposure, including arbitrary time charges for permanent partial disabilities and deaths) was recorded at .72, a plus 21 per cent in the 1940-41 period. The ratio of lost time injuries, 1937-41, resulting in death was 1 in 236; 1 in 11 resulting in permanent partial disability.

Army Calls Maj. Thomas

Major Earle L. Thomas, of Wm. M. Ware & Co., oil and fat brokers, New York, was called up recently for active duty in the United States Army. He is stationed as a Warehouse Officer at the Port of Embarkation, Army Base, Boston. Major Thomas has been connected with Ware since 1935.

Chicago Associations Golf

The Chicago Drug and Chemical Association and the Chicago Perfumery, Soap and Extract Association held their mid-summer inter-club golf meet at Tam O'Shanter Country Club, August 6, with 36 members and 24 guests participating. War savings stamps were among the prizes, the winners being as follows:

Class A—1st, C. W. Allen; 2nd, D. Puffer; 3rd, L. Leavitt; 4th, E. Smith.

Class B—1st, W. Johnson; 2nd, A. Stephan, Jr.; 3rd, S. Lind; 4th, A. Stephan, Sr.

Class C—1st, R. Holland; 2nd, R. Gillhan; 3rd, E. Nelson; 4th, R. Sandke.

Class D—1st, J. Rudolph; 2nd, J. Gauer; 3rd, K. Spraker; 4th, A. E. Miller.

One more tournament remains on the summer schedule of the two Chicago organizations, this being set for Sept. 22 at Evanston Country Club.

F. H. Taussig Moves

F. H. Taussig, representative and distributor of heavy chemicals, transferred his offices on September 1, to 175 West 76th St., New York. This firm was formerly located at 203 W. 74th St., and made the move in order to expand its quarters.

Rumor Causes Soap Spree

Rumors of soap rationing in Canada several weeks ago caused bedlam to break loose in a wave of soap buying that threatened to deluge Toronto drug and department stores and denude their shelves of all forms of soap. Counters were mobbed, telephone lines jammed, and sales clerks were barely able to cope with the unusual demand. When officials of the Wartime Prices and Trade Board in Ottawa were apprized of the situation, they described the rumors that soap was about to be rationed as "ridiculous." The Board scotched the story that the buying epidemic had been precipitated by a broadcast that soap was to be rationed. A check by the Board revealed that no such statement had been made by the Canadian Broadcasting Corporation.

Meanwhile, in an effort to curtail the buying splurge, two big stores restricted customers to one dollar's worth of soap in any form. How long this form of rationing will be maintained is not yet known, but according to a spokesman for one of the stores, it will remain as long as the public continues panicky buying.

One theory was put forth that new ration books that are due to appear shortly carry several coupons for commodities not yet rationed, and that soap was mistakenly understood to be one of them.

Market New Metal Cleaner

Vollrath Co., Sheboygan, Wis., has announced a new utensil cleaner, "Vollrath's Liquid Cleaner," for use on any type of metal, porcelain or enamelled kitchen utensil. Containers of 12 oz., quart and gallon size are available and a special promotion is being directed to restaurant and institutional trade. Household kits are also offered, which include a 12 oz. container with two cellulose sponge pads and one stainless steel wool pad.

Dictionary "Sweetheart" Premium

Manhattan Soap Co. is currently making an offer by radio of a Webster's Dictionary for three "Sweetheart" soap wrappers and 15 cents.

that can wasn't "planted"!

No specially posed advertising illustration is this picture!

It's an official Army photograph . . . straight from the files of the United States Army Signal Corps (SC-130812 to be precise) . . . and that Crown Can is there because it's actually in service!

When Crown wanted a picture to show a water purification unit of the U. S. Engineers in actual operation the Signal Corps supplied this picture. We did not tell the Army for which of our customers we wanted to use the photograph. It was our original intention only to use the picture as a background . . . and say that Sanitation HTH, the product of our customer, the Mathiesen Alkali Works, Inc., of New York, was used by the Army in many of these units.

But when we got the print, there was a Crown Can holding Sanitation HTH, sitting on a rock with the trademark perfectly legible!

Just goes to show that you'll meet up with Crown Cans in lots of places the Army and Navy go in wartime!

CROWN CAN COMPANY,
PHILADELPHIA, PA., *Division*
of Crown Cork and Seal Company



PHOTO BY U. S. ARMY SIGNAL CORPS

CROWN CAN



BIDS AWARDS

N. Y. Navy Awards

The following awards for miscellaneous supplies were made by the New York Navy Purchasing Office, in a recent opening: Weed Laboratories, Newark, N. J., 25,000 gals. general disinfectant and fungicide at \$2.02 a gal. and \$1.53 for carboy; Colgate-Palmolive-Peet Co., Jersey City, N. J., 700,000 lbs. salt-water detergent at 7.7c a lb.

Bowl Clean Bid

Fuld Brothers, Baltimore, submitted the low bid on 100 gals. of bowl clean at 65c a gal., in a recent opening by the New York Navy Purchasing Office, New York.

Disinfectant Bid

Lehn & Fink Corp., Bloomfield, N. J., submitted the low bid of \$37,135, which was one of four bids submitted, for 35,000 gals. of general and fungicide disinfectant in a recent opening by the New York Navy Purchasing Office, New York.

N. Y. Navy Bids

The following low bids were submitted in a recent opening by the New York Navy Purchasing Office, New York, for miscellaneous supplies: Fuld Brothers, Baltimore, 2,000 lbs. cleaning compound at \$148; Merit Supply Co., New York, 7,000 lbs. rust preventive compound at \$259; Vanzoil Co., Indianapolis, 300 gals. rust preventive compound at \$168. In the same opening E. A. Bromund Co., New York, Smith & Nichols, New York, and Frank B. Ross Co., Hoboken, N. J., all submitted identical bids of \$162 on 300 lbs. of beeswax.

N. Y. Navy Awards

In a recent opening by the New York Navy Purchasing Office, the following awards for miscellaneous supplies were made: Sharp & Dohme,

Philadelphia, 20,000 1-pint bottles of camphor and soap liniment at 22c a pint; Colgate-Palmolive-Peet Co., Jersey City, N. J., 12,500 lbs. of powdered laundry soap at 3.55c a lb., and Baird & McGuire, Holbrook, Mass., 3,000 gals. of cresylic disinfectant at 46.2c a gal.

Chip Soap Bid

Sterling Supply Corp., Philadelphia, submitted the low bid on 120,000 lbs. of laundry chip soap at \$9.16 cwt. in a recent opening by the Treasury Procurement Department, Washington, D. C.

Post Office Awards

In a recent opening by the Post Office Department, Washington, D. C., the following awards for miscellaneous supplies were made: Lasting Products Co., Baltimore, 3,000 gals. cleaner and renovator at 79c a gal.; Scholler Brothers, Philadelphia, 20 10-lb. cans of auto soap at 10c a lb., 62 50-lb. cans of auto soap at 7.3c a lb., 10 half-barrels auto soap at 6c a lb., and 41 barrels auto soap at 5.8c a lb.; Eagle Soap Co., Brooklyn, N. Y., 2,400 lbs. of grit cake soap at 4.55c a lb., f.o.b. Washington, and Stevens-Wiley Manufacturing Co., 15,360 cans of scouring powder at 2.4c a lb.

Boiler Compound Bid

Turco Products Co., Los Angeles, submitted the low bid on 1,000 lbs. of boiler compound in a recent opening in Washington, D. C. for miscellaneous supplies for the Panama Canal.

N. Y. Navy Soap Bids

The following low bids were received by the New York Navy Purchasing Office, New York, in a recent opening for miscellaneous supplies: Day & Frick, Philadelphia, 100,000 cakes of grit soap at 3.15c a cake; Harley Soap Co., Philadelphia, 30,000 4-oz.

bottles tincture of green soap at 14.5c a bottle and 111,300 lbs. of soft soap at \$8,360 total. In the same opening R. M. Hollingshead Corp., Camden, N. J., submitted the low bid on 734,600 pint cans of liquid metal polish at 6.9c a can.

Disinfectant Bid

In a recent opening by the New York Navy Purchasing Office, New York, Crystal Soap & Chemical Co., Philadelphia, submitted the low bid on 300,000 quart tins of cresolic disinfectant at 26.46c quart Zone 1, and at 32.49c quart Zone 2.

OPA Price Rise Policy

When the wholesale price of an item is revised, the wholesaler must notify the retailer of the effect of the adjustment on retail price ceilings. This policy was adopted by the O.P.A. recently in authorizing an upward change in the price of a cleansing powder by a wholesale establishment. This policy came to light in the handling of the request of the Bird-Shankle Corp. of San Antonio, Texas, wholesale grocers, to raise the maximum price for "Old Dutch Cleanser" from \$3.10 to \$3.19 for cases containing 48 fourteen-ounce cans. The policy is found in order No. 27 under section 1499.18 (B) of the general maximum price regulation. It was pointed out that the notification by the wholesaler of the retailer does not permit the retailer to increase the selling price as established by the maximum price regulation.

The adjustment made in favor of the San Antonio wholesaler was done to cover his handling and storage costs, since the wholesale price and the cost to the wholesaler were the same. Besides, the maximum price of \$3.10 was "out of line with the price charged by competitive sellers of the same commodity," said OPA.

Michigan Moves Sales Offices

Michigan Alkali Company's general sales offices are now located in Wyandotte, Michigan. Prior to August 20, they were located in the Ford Building, Detroit. The new mail address is P. O. Drawer 472, Wyandotte.

WOBURN

DEGREASING CO. OF N. J.

HARRISON, N. J.

Offers

Quantity Production of Glycerine-free

COCOANUT FATTY ACID REPLACEMENTS

for the SOAP and COSMETIC Industries

Extensive commercial use shows these products have lathering qualities similar to cocoanut oil, and give soaps of a body similar to cocoanut soaps

THREE BLENDS

to meet your particular requirements:

C—clear, light yellow liquid—Titre °C., 21-25

CH—clear, light liquid—Titre °C., 21-25

CW—clear, white liquid—Titre °C., 11-15

FATTY ACIDS	PRINCIPAL USES	CHEMICAL CHARACTERISTICS			
		Acid No.	Saponification No.	Iodine No.	Titre C
Cocoanut Fatty Acid Replacements					
1. Fatty Acid Blend C.....	Soaps, shaving creams, shampoos.....	198-208	200-210	95-105	21-25
2. Fatty Acid Blend CH.....	Lightest colored soaps, shaving creams, shampoos; dry cleaning soaps.....	198-208	200-210	95-105	21-25
3. Fatty Acid Blend CW.....	Lightest colored soaps, shaving creams, shampoos; dry cleaning soaps.....	198-208	200-210	80-90	11-15

RAW MATERIALS FOR THE SOAP INDUSTRY

FATTY ACID SUBSTITUTES FOR COCONUT OIL

Mixtures of Vegetable oil fatty acids to replace coconut and other high-glycerine content oils now unavailable to many soap makers. It will pay you to investigate these replacement materials at once. Write for samples and prices.

Caster Oil
Cone Oil
Cottonseed Oil
Olive Oil

Olive Oil Foots
Peanut Oil
Rapeseed Oil
Sesame Oil

Soya Bean Oil
Fatty Acids
Lard Oils
Neatsfoot Oil

Oleo Stearine
Stearic Acid
White Olein
Tallow

Grease
Lanolin
Caustic Soda
Soda Ash

Borax
Caustic Potash
Carbonate Potash
Sal Soda

Boric Acid
Modified Soda

Silicate Soda
Metasilicate
Tri Sodium Phosphate

Di Sodium Phosphate
Chlorophyll
Superfating Agent

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A recent innovation in Welch, Holme & Clark service is the mixing of dry alkalies for private formula products. Let us handle this operation for you.

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ESTABLISHED 1838

NEW YORK CITY

TRADE MARKS

The following trade-marks were published in the August issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks

KAKO—This in solid letters describing metal and window cleaner. Filed Apr. 15, 1942, by Goodell-Varner-Chemical Co., Rock Island, Ill. Claims use since Apr. 3, 1942.

PEANUTOLA—This in solid letters describing shampoo preparation. Filed May 19, 1942, by Eugenie Marchado, New York. Claims use since Oct. 1, 1941.

CEEPRYN—This in solid letters describing germicidal solution. Filed by Wm. S. Merrell Co., Cincinnati, May 27, 1942. Claims use since Jan. 28, 1942.

P-O-D—This in outlined letters on a drawing of a pine tree describing liquid germicide and disinfectant. Filed by D. H. Buster Chemical Co., Kansas City, Mo., June 12, 1942. Claims use since Mar. 1, 1942.

3XB—This in solid letters describing athletes foot preparation. Filed by F. Ad. Richter & Co., Brooklyn, N. Y., June 18, 1942. Claims use since Feb. 6, 1934.

SURFACEAL—This in solid letters describing automobile polisher and cleaner. Filed by Surfaceal Inc., Providence, R. I., Oct. 9, 1941. Claims use since June 1, 1939.

DEXTA—This in solid letters describing cleaning and polishing preparation. Filed by A. S. Boyle Co., Jersey City, N. J., May 21, 1942. Claims use since Aug. 1, 1935.

No. 600—This in solid letters describing household cleaning prepara-

tion. Filed by Solvay Process Co., New York, June 9, 1942. Claims use since April, 1941.

42—Solid numerals describing shampoos. Filed by 42 Products, Inc., Los Angeles, May 6, 1942. Claims use since Nov. 19, 1935.

BUG BALK—This in solid letters describing insect repellent. Filed by Lee B. Leslie, Grand Prairie, Texas, June 1, 1942. Claims use since Apr. 1, 1940.

CHEVRON—This in reverse letters on a drawing of a chevron describing furniture, floor and automobile polish. Filed by Standard Oil Company of California, San Francisco, May 7, 1942. Claims use since Feb. 24, 1942.

MYCO—This in outline letters describing floor oils, spray oils, cedar and wax sprays, liquid soap, vegetable oil soaps and soap powders. Filed by Masury-Young Co., Charlestown, Mass., Nov. 1, 1941. Claims use since Jan. 4, 1939.

AMARON—This in reverse letters on a fanciful emblem over the words "Norma" describing cleaner, detergent and soap substitute compound. Filed by Norma Chemical Co., Mount Vernon, N. Y., May 27, 1942. Claims use since Feb. 1942.

RUBEROL—This in solid letters under a drawing of a steer describing automobile tire preservative and cleaning preparation. Filed by Lehman Brothers Corp., Jersey City, N. J., June 24, 1942. Claims use since May 15, 1942.

COSMOLINE—This in stencil letters describing rust and corrosion preventive compound. Filed by E. F. Houghton & Co., Philadelphia, Mar. 17, 1942. Claims use since June 21, 1917.

ORA-NOID—This in reverse letters on a fanciful emblem describing dentifrice. Filed by Acme Laboratories, Inc., Chicago, Apr. 8, 1942. Claims use since Jan. 1937.

KLENOFOAM—This in solid letters describing soapless cleaner. Filed by West Disinfectant Co., Long Island City, N. Y., Aug. 21, 1941. Claims use since May 22, 1941.

PEANUTOLA—This in solid letters describing cleansing soap. Filed by Eugenie Marchado, New York, May 19, 1942. Claims use since Oct. 1, 1941.

ROYAL SCARLET—This in solid letters describing insecticides, disinfectant, and borax. Filed by R. C. Williams & Co., New York, June 13, 1942. Claims use since Apr. 1, 1942.

SPERSON—This in solid letters describing seed disinfectant. Filed by United States Rubber Co., New York, July 2, 1942. Claims use since Dec. 31, 1940.

SOLVO—This in outline letters describing hand cleaner. Filed by Great Stuff Products Co., Inc., West New York, N. J., Mar. 25, 1941. Claims use since May 8, 1926.

MACO—This in pencil letters on a fanciful background describing general cleaner. Filed by Maco Manufacturing Co., Oakland, Calif., Apr. 27, 1942. Claims use since July, 1939.

KLICX—This in solid letters over the words "auto wash" describing automobile cleaning compound. Filed by Chemical Manufacturing & Distributing Co., Easton, Pa., June 4, 1942. Claims use since Apr. 1, 1939.

Trade Marks Granted

395,910. Laundry washing compound. Filed Jan. 28, 1942, by H. Kohnstamm & Co., New York. Serial No. 450,543. Published Apr. 7, 1942. Class 4.

395,919. Insecticide. Filed Feb. 3, 1942, by Plunkett Chemical Co., Chicago. Serial No. 450,683. Published Apr. 7, 1942. Class 6.

396,588. Furniture and automobile polish. Filed by Frank Harris Laboratories, Los Angeles, Oct. 6, 1941. Serial No. 447,565. Published May 19, 1942. Class 16.

396,596. Shampoos. Filed by Anre, New York, Dec. 22, 1941. Serial No. 449,691. Published Apr. 28, 1942. Class 6.

396,610. Insecticides and fungicides. Filed by John Lucas & Co.,



Schimmel
for
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Waiting for you

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is our well tried line of
SOAP PERFUMES

Spare yourself costly experiments by
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Philadelphia, Jan. 15, 1942. Serial No. 450,234. Published Apr. 28, 1942. Class 6.

396,625. Detergent cleaning compound. Filed by Turco Products, Inc., Los Angeles, Feb. 4, 1942. Serial No. 450,753. Published May 19, 1942. Class 4.

396,635. Roach powder. Filed by Odoredo Pentuff, Tampa, Fla., Feb. 14, 1942. Serial No. 450,975. Published Apr. 1942. Class 6.

396,643. Hanley & Kinsella Laboratories, Inc., St. Louis, Mo., Feb. 26, 1942. Serial No. 451,232. Published May 5, 1942. Class 6.

396,671. Cutting oil germicide. Filed by C. B. Dolge Co., Westport, Conn., Mar. 16, 1942. Serial No. 451,670. Published May 5, 1942. Class 6.

396,683. Shampoo. Filed Edg-hills Laboratories, New York, Mar. 18, 1942. Serial No. 451,729. Published Apr. 28, 1942. Class 6.

396,761. Cleaner and polish. Filed by L & L Products, Chicago, Mar. 22, 1941. Serial No. 441,824. Published May 26, 1942. Class 4.

396,767. Vegetable soap. Filed by A B C Co., New York, May 23, 1941. Serial No. 443,832. Published May 26, 1942. Class 4.

396,816. Automotive cleaning compound. Filed by Turco Products, Inc., Los Angeles, Feb. 4, 1942. Serial No. 450,754. Published May 26, 1942. Class 4.

396,824. Soap and cleaning solvent. Filed by American Oil Co., Baltimore, Feb. 16, 1942. Serial No. 450,987. Published May 26, 1942. Class 4.

396,827. Soap. Filed by Procter & Gamble Co., Cincinnati, Feb. 23, 1942. Serial No. 451,181. Published May 26, 1942. Class 4.

396,840. Bubble bath. Filed by Banson Products Co., Los Angeles, Mar. 4, 1942. Serial No. 451,377. Published May 26, 1942. Class 4.

396,920. Anti-rust and flushing compounds. Filed by Commercial Solvents Corp., New York, July 28, 1941. Serial No. 445,686. Published May 19, 1942. Class 6.

396,926. Shampoo. Filed by Homer H. Dary & Son, Racine, Wis.,

Oct. 27, 1941. Serial No. 448,131. Published May 19, 1942. Class 6.

396,927. Hand cleaner. Filed by Frederick Lambert, New York, Nov. 4, 1941. Serial No. 448,389. Published May 26, 1942. Class 4.

396,945. Borax. Filed by Francis H. Leggett Co., New York, Jan. 16, 1942. Serial No. 450,197. Published June 2, 1942. Class 6.

396,986. Insecticides. Cooperative G. L. F. Soil Building Service, Inc., Ithaca, New York, Mar. 25, 1942. Serial No. 451,890. Published May 26, 1942. Class 6.

396,996. Sodium hypochloride disinfectant. Filed by Fred Herman & Sons, Chicago, Mar. 28, 1942. Serial No. 451,974. Published May 19, 1942. Class 6.

397,082. Powder cleanser. Filed by Pioneer Salt Co., Philadelphia, Jan. 10, 1942. Serial No. 450,144. Published June 2, 1942. Class 4.

397,152. Soap, soap flakes and chips, cleaning preparation. Filed by Fitzpatrick Bros., Inc., Chicago, Dec. 9, 1939. Serial No. 426,407. Published June 16, 1942. Class 4.

397,155. Soap. Filed by Dorothy Gray Salons, Bloomfield, N. J., Nov. 8, 1940. Serial No. 437,678. Published Feb. 4, 1941. Class 4.

397,194. Glass cleaner. Filed by Louis Edwards, Denver, Jan. 22, 1942. Serial No. 450,394. Published June 9, 1942. Class 4.

397,218. Washing and cleaning preparations. Filed by Special Formula Corp., Bloomfield, N. J., Mar. 17, 1942. Serial No. 451,693. Published June 16, 1942. Class 4.

397,238. Soap. Filed by Prince Matchabelli Inc., New York, Apr. 3, 1942. Serial No. 452,133. Published June 9, 1942. Class 4.

397,242. Toilet soap. Filed by Murley, Lloyd & Co., New York, Apr. 6, 1942. Serial No. 452,170. Published June 16, 1942. Class 4.

397,244. Sweeping Compound. Filed by Zellebach Paper Co., San Francisco, Apr. 6, 1942. Serial No. 452,181. Published June 16, 1942. Class 4.

397,250. Dentifrice. Filed by Ecnal Laboratories, Pasadena, Calif.,

Apr. 10, 1942. Serial No. 452,261. Class 6.

397,274. Shampoo. Filed by McKesson & Robbins, Inc., New York, Apr. 24, 1942. Serial No. 452,559. Published Apr. 24, 1942. Class 6.

U.S. Signs Babassu Pact

The United States has agreed to purchase major quantities of babassu nuts and oil from Brazil under terms of an agreement recently culminated. It is reported that the U.S. will purchase up to \$10,000,000 worth of babassu nuts and oil, according to an announcement from Brazil. The terms of the four year babassu agreement provide that the U.S. will purchase unlimited quantities of babassu in the first two years and up to 100,000 metric tons during each of the next two. The U.S. will purchase "all surpluses" and if unable to provide sea transportation within 30 days, the surpluses will be stored awaiting transportation later. Premiums, paid for increased production, are to be used to develop roads to gain better access to the babassu trees. Large purchases of castor beans and oil from Brazil are also mentioned in the terms of the agreement.

Other news concerning South America is the announcement by the United States of a 50 per cent tariff duty and import tax reduction on inedible and edible tallow, oleo oil and oleo stearin imported from Uruguay and Argentina. Formerly the tallow duty was 1/2 cent in addition to the 3 cent a pound import tax. Oleo oil and oleo stearin duty was 1 cent a pound and the import tax 3 cents a pound. Both agreements bind the duties on crude and refined glycerine, which means that rates will not be increased on imports into the United States.

C-P-P Raises E. E. Wilson

Colgate-Palmolive-Peet Co., Jersey City, has just appointed Emerson E. Wilson district sales manager for Pittsburgh. He has been with the company since 1930 and for the past two years was sales supervisor in the New York City area.

A practical book on
Soap Manufacture . . .

"MODERN SOAP MAKING"

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Here is what the authors say about their own book in the foreword:

"Above all, this book is designed as a practical volume for the practical soapmaker. Its compilation is based on twenty years of actual experience in the soap plant by the authors. Little attention is given to the theories of saponification or detergency. The emphasis is all on the practical handling and refining of raw materials, kettle practice, and other operations in the modern soap factory."

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GLYCERINE	SALT WATER SOAPS
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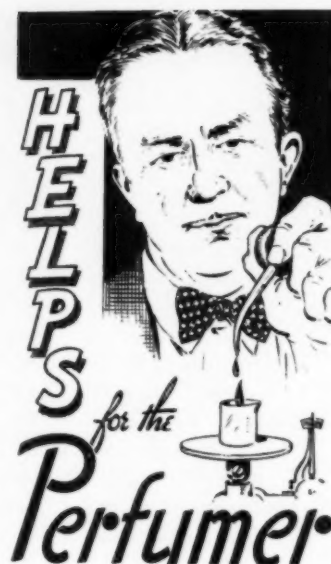
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Whether you have ever used OIL FIR NEEDLES CANADA (Oil Pine Needles) or not, we sincerely recommend your test of this new Canadian product.

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ESSENTIAL OILS

PERFUME MATERIALS

AROMATICS

MARKETS

As of August 27, 1942

THE raw material market this month in maintaining a calm that can only be expected to precede a storm of buying was characterized in some quarters as "spotty." Two unrelated cracks of activity that marred an otherwise perfect calm were the lifting of the ceilings on essential oils and the spasmodic flare-up of aromatic chemicals and essential oils buying, this latter activity being set into motion in advance of the OPA ruling on essential oils. The unusual (for this time of year) interest in aromatic chemicals and essential oils is the natural result of the lowered quality of fats and oils going into the manufacture of soap. However, the temporary lifting of the ceiling on volatile oils—the most important of which are peppermint and spearmint — is something else again. Sales and deliveries of volatile oils by the growers of the plants from which these oils are distilled were exempted from provisions of the General Maximum Price Regulation, the OPA announced around the middle of August. At the same time, it was made known that the prices of these oils will be closely scrutinized and, if desirable, a maximum price regulation covering them may be issued in a few months. The reason for the removal of the ceiling was the fact that there were no sales made on these items during March, which was the base pricing period of the regulation.

Opinion in most quarters of the essential oil trade here was that prices would rise and for two reasons. First, peppermint is the source of a substitute for menthol, which is a casualty of the Far Eastern phase of the war. Secondly, the heavy rainfall experienced this summer has reduced the size of the peppermint crop to a record

low. While advances were also expected for the spearmint crop, they were predicted to fall short of those of peppermint.

Meanwhile minor fluctuations in aromatic chemicals were reported as: hydroxycitronellal lowering to a \$7.25-\$8.25 range, eucalyptol, U.S.P. advancing from \$2.00-\$2.50 to a \$2.25-\$2.65 quotation, and benzaldehyde, tech., N.F. VI, rising sharply to a top figure of \$2.75.

Essential oil changes recorded during the period just closing varied in this way: sweet fennel dropped to \$3.60 from the previously reported figure of \$4.20. California lemon oil showed a slight downward tendency from \$3.10 to \$3.00. California orange's \$3.00 figure was lowered to \$2.65, while sandalwood rose from \$6.00-\$6.75 to \$6.50-\$7.00.

Insecticide materials were pretty well stabilized with no price changes reported. Further action by Washington in passing on pyrethrum orders for household use indicates the tendency to allow shipment of 10 per cent of orders for the powder and 25 per cent of the extract.

A drop in the price of 88 per cent tallow chip soap was recorded late in August when the price range fell to 10 $\frac{5}{8}$ cents for five barrel lots and to 11 cents for single barrel quantities. The 92 per cent powder price was also off to 10 $\frac{7}{8}$ cents for multiple barrels and 11 $\frac{1}{4}$ cents for single barrels.

While it is still too early to determine the precise effect on the market of the two recent bits of news affecting U. S. trade relations with our South American neighbors: Brazil, Uruguay and Argentina, the soaper should react favorably to them. In the one instance we have agreed to purchase unlimited quantities of babassu nuts and oil from Brazil in the first

two years of a four-year agreement, and up to 100,000 metric tons during each of the next two years. In the other bit of good news, both tariff duties and import taxes on inedible and edible tallow and oleo stearin and oleo oil will be cut in half. The complete details of these stories are found on another page of this issue. Their importance to soapers cannot be over emphasized since both these moves will vitally aid the dwindling supply of soap ingredients.

P&G Promotional Campaign

Procter & Gamble Co., Cincinnati, is conducting a promotional campaign for "Camay" toilet soap and "Oxydol" laundry powder in which a total of \$50,000 cash will be given away. Entrants complete in 35 words or less a statement beginning "Oxydol and Camay are favorites in my home because—" and send this with a box top and wrapper. Ten \$100 bills are given away every day for 25 days and in addition the company donates another \$100 to the United Service Organizations in the name of each daily prize winner.

Quillaia Bark Shampoo

A shampoo composition contains 2 parts of finely powdered quillaia bark thoroughly mixed with 1 part of finely powdered borax. The powder is dusted evenly into the hair while dry, then rubbed well in after adding a little warm water. Herbert A. Gleim. British Patent No. 545,405.

Textile Agent

A mixture of hydrogenated pine oil and fatty alcohol sulfates is used as a wetting agent in the textile industry. Bohme Fettchemie-G.m.b.H. German Patent No. 683,845.

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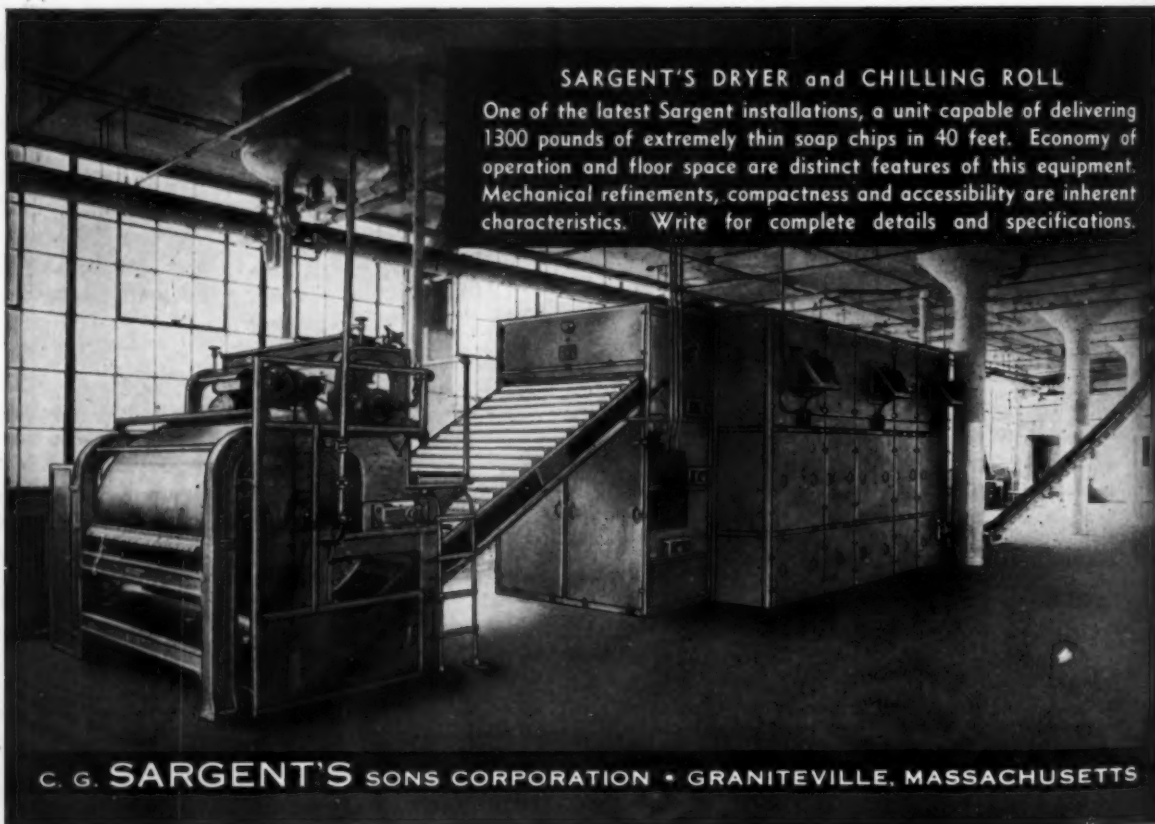
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PRICES

(As of August 27, 1942)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C.P., drums	lb.	\$.08½	\$.09
Acid, Boric, bbls., 99½%	ton	106.00	128.00
Cresylic, drums	gal.	.81	.86
Low boiling grade	gal.	.81	.86
Muriatic, C. P., carboys	lb.	.08	—
Oxalic, bbls.	lb.	.11¼	.14¼
Adeps Lanae, hydrous, drums	lb.	.32	.34
Anhydrous, drums	lb.	.33	.35
Alcohol, Ethyl, drums	gal.	8.19	8.25¼
Complete Denat., SD1, dms., ex. gal.		.60	.65
Alum. Potash lump, bbls.	lb.	.04½	—
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., drums	lb.	.08¼	.09¼
Bentonite	ton	25.00	51.00
Bleaching Powder, drums	100 lb.	2.25	3.35
Borax, pd., bbls., bags	ton	50.00	75.00
Carbon Tetrachloride, car lots	gal.	.73	1.17
L. C. L.	gal.	.80	1.27
Cresol, U.S.P., drums	lb.	.11	.11½
Creosote Oil	gal.	.141	.15¼
Feldspar, works	ton	30.00	35.00
Formaldehyde, bbls.	lb.	.05¼	.07¼
Fullers Earth	ton	8.50	15.00
Glycerine, C.P., drums	lb.	.18¼	.19¼
Dynamite, drums	lb.	.18¼	.18¾
Saponification, drums	lb.	.12¾	.14¾
Soap lye, drums	lb.	.11½	—
Lime, live, bbls.	ton	6.25	13.00
Mercury Bichloride, drums	lb.	2.24	2.39
Naphthalene, ref. flakes, bbls.	lb.	.08	—
Orthodichlorobenzene	lb.	.07½	.08½
Paradichlorobenzene, drums	lb.	.11	.15
Petrolatum, bbls. (as to color)	lb.	.03½	.08
Phenol (Carbolic Acid) drums	lb.	.12½	.14¼
Pine Oil, drums	gal.	.50	1.05
Potash, Caustic, solid	lb.	.06¼	.06¾
Flake, 88-92%	lb.	.07	.07¼
Liquid, 45% basis	lb.	.02¾	.03¼
Potassium Carbonate, solid	lb.	.06½	.06¾
Liquid	lb.	.03	.03¾
Pumice Stone, coarse	lb.	.03½	.04¾
Rosins (net wt., ex dock, New York)—			
Grade D to H.	100 lb.	3.54	3.65
Grade I to N.	100 lb.	3.67	3.77
Grade WG to X.	100 lb.	3.81	3.85
Rotten Stone, dom., bags	lb.	.02½	.04
Silica	ton	20.00	27.00
Soaps—			
Tallow Chip, 88%	lb.	.10%	.11
Powder, 92%	lb.	.10%	.11¼
Powdered. White Neutral	lb.	.25½	.42
Olive Oil Paste	lb.	.40	—
Shampoo Base	lb.	.18	.20
Liquid Concentrate, 30-32%	gal.	.75	.79
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.05	1.45
Car lots, in bulk	100 lb.	.90	.95
Soda Caustic, cont., wks., solid	100 lb.	2.30	—
Flake	100 lb.	2.70	2.95
Liquid, tanks, 47-49%	100 lb.	1.92¼	1.95

Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	14.20	18.00
Sodium Fluoride, bbls.	lb.	.08	.09¼
Sodium Hydrosulfite, bbls.	lb.	.17	.18
Sodium Metasilicate, anhyd.	100 lb.	4.00	5.30
Granulated	100 lb.	2.50	3.55
Sodium Pyrophosphate	100 lb.	5.25	6.80
Sodium Silicate, 40 deg., drum	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb.	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.27½	.33¾
Triethanolamine	lb.	.18	.20
Trisodium Phosphate, bags, bbls.	100 lb.	2.70	4.30

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.11%	Nom.
Castor, No. 1, bbls.	lb.	.14	.14½
No. 3, bbls.	lb.	.13%	.14%
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	No Prices	
Tanks, Pacific Coast, futures	lb.	No Prices	
Copra, bulk, coast	lb.	No Prices	
Corn, tanks, West	lb.	.12%	—
Cottonseed, crude, tanks, mill	lb.	.12%	—
PSY, futures	lb.	.13%	.14%
Fatty Acids—			
Corn Oil, tanks, Chicago	lb.	.14	.14½
Coconut Oil, tanks, Twitchell, Chi.	lb.	.18½	Nom.
Cotton Oil, tanks, Chicago	lb.	.14	—
Settled soap stock, Chicago	lb.	.03%	.04
Boiled soap stock, 65%, Chi.	lb.	.04%	.05
Foots, 50%, Chicago	lb.	.03%	.04
Castor Oil, split, tanks, N. Y.	lb.	.20%	.21¼
Linseed Oil, split, tanks, N. Y.	lb.	.18½	—
Distilled	lb.	.21	.21½
Myristic acid, distilled, tanks, N.Y.	lb.	.19	.19½
Palm Oil, white, tanks, N. Y.	lb.	.13	.13½
Single distilled	lb.	.12	—
Soybean Oil, split, tanks, N. Y.	lb.	.16	—
Distilled	lb.	.19½	.20
Red Oil, bbls., dist. or sapon.	lb.	.1330	.1480
Tanks	lb.	.1245	—
Stearic Acid, saponif.			
Double pressed	lb.	.1580	.1680
Triple pressed	lb.	.1885	.1985
Greases, choice white, tanks	lb.	.08%	—
Yellow	lb.	.08%	—
Lard, city, tubs	lb.	.12½	.12¾
Linseed, raw, bbl.	lb.	.1350	.1370
Tanks, raw	lb.	.1260	.1280
Olive, denatured, bbls., N. Y.	gal.	4.20	4.30
Foots, bbls., N. Y.	lb.	.19½	Nom.
Palm, Sumatra. cif. New York, Tanks	lb.	No Prices	
African, tanks, ex. ship	lb.	.08¼	Nom.
Palm, kernel	lb.	No Prices	
Peanut, crude, tanks, mill	lb.	.13	Nom.
Soya Bean, domestic, tanks, crude	lb.	.12½	Nom.
Stearin, oleo, bbls.	lb.	.1054	—
Tallow, special, f.o.b. N. Y.	lb.	.08½	—
City, ex. loose, f.o.b. N. Y.	lb.	.08%	—
Teaseed Oil, crude	lb.	No Prices	



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As one of the world's leading producers of Caustic Potash, we offer the various forms listed, for immediate shipment from New York City, Niagara Falls and other points conveniently located.

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SOAPS

(As of August 27, 1942)

Essential Oils

Almond, Bitter, U.S.P.	lb.	\$3.50	\$3.75
Bitter, F.F.P.A.	lb.	4.75	5.00
Sweet, cans	lb.	2.25	2.50
Anise, cans, U.S.P.	lb.	3.35	3.75
Bay, 55-66% phenols, cans	lb.	1.60	2.10
Bergamot, coppers	lb.	32.00	Nom.
Artificial	lb.	2.25	6.50
Birch Tar, rect., cans	lb.	—	—
Crude, cans	lb.	—	—
Boise de Rose, Brazilian	lb.	5.00	5.25
Cayenne	lb.	—	—
Cade (juniper tar), drums	lb.	1.50	Nom.
Cajeput, tech, drums	lb.	—	2.10
Calamus, cans	lb.	—	—
Camphor, Sassy, drums	lb.	—	—
White, drums	lb.	—	—
Cananga, native, cans	lb.	17.00	17.50
Rectified, cans	lb.	18.25	20.00
Cassia, Redistilled, U.S.P.	lb.	10.50	12.00
Cedar Leaf, cans	lb.	1.05	1.35
Cedar Wood, light, drums	lb.	.75	1.00
Citronella, Java, drums	lb.	—	—
Citronella, Ceylon, drums	lb.	1.30	1.70
Clove, U.S.P., cans	lb.	1.80	2.00
Eucalyptus, Austl., U.S.P., cans	lb.	1.05	1.30
Fennel, sweet, cans	lb.	3.60	—
Geranium, African, cans	lb.	30.00	Nom.
Bourbon, cans	lb.	24.00	—
Turkish (Palmarosa)	lb.	5.25	5.50
Hemlock, cans	lb.	1.20	1.25
Lavender, 30-32% ester, cans	lb.	—	—
Spike, Spanish, cans	lb.	4.25	4.35
Lemon, Ital., U.S.P.	lb.	—	Nom.
Cal.	lb.	3.00	—
Lemongrass, native, cans	lb.	3.00	3.50
Linaloe, Mex., cases	lb.	4.25	—
Nutmeg, U.S.P., cans	lb.	4.75	6.00
Orange, Sweet, W. Ind., cans	lb.	6.00	6.25
Italian cop	lb.	8.00	Nom.
Distilled	lb.	1.70	—
California, expressed	lb.	2.65	—
Origanum, cans, tech	lb.	2.75	2.90
Patchouli	lb.	8.00	8.50
Pennyroyal, dom.	lb.	—	—
Imported	lb.	3.15	3.25
Peppermint, nat., cans	lb.	5.50	5.75
Redis., U.S.P., cans	lb.	6.00	6.25
Petitgrain, S. A., cans	lb.	1.95	2.20
Pine Needle, Siberian	lb.	3.00	3.25
Rosemary, Spanish, cans	lb.	2.25	2.30
drums	lb.	2.10	2.15
Sandalwood, dom., dist., U.S.P.	lb.	6.50	7.00
Sassafras, U.S.P.	lb.	2.00	2.20
Artificial, drums	lb.	2.00	—
Spearmint, U.S.P.	lb.	—	3.25
Thyme, red, N. F.	lb.	2.60	3.25
White, N. F.	lb.	2.85	3.50
Vetiver, Java	lb.	42.00	50.00
Ylang Ylang, Bourbon	lb.	—	—

Aromatic Chemicals

Acetophenone, C. P.	lb.	\$1.55	\$1.60
Amyl Cinnamic Aldehyde	lb.	—	—
Anethol	lb.	2.25	2.40
Benzaldehyde, tech.	lb.	.45	.55
N. F. VI	lb.	.85	2.75
Benzyl, Acetate	lb.	.59	Nom.
Alcohol	lb.	.63	.75
Citral	lb.	5.50	7.00
Citronellal	lb.	2.75	3.25
Citronellol	lb.	7.00	7.25
Citronellyl Acetate	lb.	—	—
Coumarin	lb.	2.75	3.25
Diphenyl oxide	lb.	.43	.50
Eucalyptol, U.S.P.	lb.	2.25	2.65
Eugenol, U.S.P.	lb.	2.75	2.80
Geraniol, Soap	lb.	1.10	1.50
Other grades	lb.	1.50	3.50
Geranyl Acetate	lb.	—	—
Heliotropin	lb.	5.25	Nom.
Hydroxycitronellal	lb.	7.25	8.75
Indol, C. P.	lb.	28.00	30.00
Ionone	lb.	2.75	3.95
Isoborneol	lb.	.81	.90
Iso-bornyl acetate	lb.	.80	.95
Iso-Eugenol	lb.	—	—
Linolool	lb.	6.75	7.00
Linalyl Acetate	lb.	5.50	7.25
Menthol, natural	lb.	—	13.50
Synthetic, U.S.P.	lb.	13.00	—
Methyl Acetophenone	lb.	—	—
Anthraniolate	lb.	2.20	2.35
Paracresol	lb.	—	—
Salicylate, U.S.P.	lb.	.35	.40
Musk Ambrette	lb.	4.00	4.45
Ketone	lb.	4.15	4.60
Xylol	lb.	1.40	1.80
Phenylacetaldehyde	lb.	5.00	6.00
Phenylacetic Acid	lb.	1.85	1.90
Phenylethyl Alcohol	lb.	2.10	2.50
Rhodinol	lb.	—	—
Safrol	lb.	2.25	2.45
Terpineol, C.P., drs.	lb.	.40	—
Cans	lb.	.43	—
Terpinyl Acetate, 25 lb. cans	lb.	.87	—
Thymol, U.S.P.	lb.	3.00	Nom.
Vanillin, U.S.P.	lb.	2.35	2.75
Yara Yara	lb.	1.80	1.85

Insecticide Materials

Insect Powder, bbls.	lb.	.29	.30
Pyrethrum Extract			
20 to 1	gal.	5.90	6.00
30 to 1	gal.	8.85	9.00
Derris, powder—4%	lb.	.31	—
Derris, powder—5%	lb.	.35	—
Cube, powder—4%	lb.	.31	—
Cube, powder—5%	lb.	.35	—
Squill, red, dried	lb.	.85	1.00

Waxes

Bees, white	lb.	.61	—
African, bgs.	lb.	.49	—
Refined, yel.	lb.	.59	.60
Candelilla, bgs.	lb.	.38	—
Carnauba, No. 1, yellow	lb.	.88	.89
No. 2, N. C.	lb.	.84	.85
No. 3, Chalky	lb.	.77	.78
Ceresin, yellow	lb.	.13 1/2	.18
Montan Wax, bags	lb.	.45	.46
Paraffin, ref., 125-130	lb.	.0520	.0560

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TODAY Fat and Oil processors are taking out a new type of insurance . . . NUCHAR Active Carbon Insurance . . . because the use of a small amount assures maximum stability of color and odor.

Although active carbon has long been used to remove color and odor from oils to be used for soap, only recently has it been recognized that undesirable colorless impurities such as peroxides and pro-oxidants are also removed by this treatment. Soaps made from stable oils have less tendency to spot, chip or become discolored.

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PRODUCTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, Oil & Fat Industries.

Action of Kettle Soaps

MERE solutions of fatty-acid salts do not represent soap solutions, since fatty-acid salts dissolve in petroleum ether to give colloidal solutions, but such solutions lack the properties of soap which give it its special value. Soaps originate when fatty-acid salts undergo transformation in water to form new units much more complex than simple molecules of fatty-acid salts. These units consist of soap cells which are made up in part of unchanged fatty-acid salts, in part of water of hydrolysis, and in part of the hydrolytic products, —fatty acids and metal hydroxide. Formation of these units is partly physical and partly chemical.

Immediately following saponification, soap cells unite in layers to form a paste. When electrolytes are added to salt out the soap, hydrolysis is suppressed and increased numbers of molecules of fatty-acid salts formed. These are held in solution by union with the soap cells, the new units enclosing a portion of electrolyte solution. The more time is given for the establishing of equilibrium between this enclosed solution and the surrounding electrolyte solution outside the new complex cells, the less the tendency for the soap formed to sweat and crack in the finished product.

In the formation of curd soap, part of the enclosed water in the complex cell evaporates to form steam. This accounts for the increase in vol-

ume of the soap, corresponding to the increase in space necessary for the formation of enclosed vapor, shown by the boiling up of the contents of the soap kettle. On cooling, a shrinkage in volume occurs as this vapor condenses, and internal heat is also evolved,—the heat produced by the transition of water vapor to liquid water. The assumption that this heat production is a question of after-saponification is not valid; saponification is completed during the boiling process and after-saponification occurs only with insufficient boiling.

In soaps which salt out easily, the proportion of simple fatty-acid salt molecules is high in the complex soap cells,—as is the case with rape-seed oil soap, for example. Castor-oil soap is difficult to salt out, but that this is not entirely due to the nature of the fatty acid is proved by the fact that cesium soaps of oleic acid and of stearin behave the same way. This leads to the conclusion that the behavior of soaps is determined by the nature of the metal as well as of the length and kind of carbon chain. With a change in the metal, pastes can be produced without reference to the kind of fatty acid, whose behavior is similar to that of castor-oil soap paste.

The above conclusions are based on numerous experimental and analytical data, the effort being to understand more about soap itself as related to manufacture, rather than the

characteristics of dilute soap solutions, on which much more has been published. Joachim Leimdorfer. *Seifensieder-Ztg.* 67, 431-2, 443-4, 455-6, 467-8, 479-80, 491-2, 503-4, 516, 525-6, 535-6, 545-6, Nos. 42-52 (1940).

Phosphate Determination

Procedures for the estimation of ortho-, pyro-, hexameta-, trimeta-, and polyphosphates in the presence of one another are given. Hexametaphosphate is separated as barium hexametaphosphate in an acid solution, and pyrophosphate is precipitated as manganous pyrophosphate at pH 4.1 in the presence of a small amount of acetone after removal of the hexametaphosphate radical. Orthophosphate is precipitated in the cold filtrate after removal of barium phosphates from a solution just acid to methyl red. Trimetaphosphate is obtained in the filtrate from an alkaline precipitation of all other phosphates as their barium salts. Total phosphorus pentoxide is determined so that polyphosphates may be obtained from the difference between the total phosphorus pentoxide and the sum of the phosphorus-pentoxide values of the other phosphates mentioned.

A qualitative test to identify the polyphosphate as tetrakisphosphate is given. Alkalinity determination is made by a standard acid titration to phenolphthalein and bromocresol green to aid in calculating the probable form

in which the phosphates may be present. Data on application of the method to analysis of samples of glassy metaphosphate, tetra- and triphosphates, and synthetic mixtures of phosphates, carbonates, and silicates, as well as unknowns of these substances, are given. Loren T. Jones. *Ind. Eng. Chem., Anal. Ed.* 14, 536-42 (1942).

Fat Changes in Storage

In the development of rancidity in fats, the changes of the constants are relatively small as compared with the organoleptic changes. There is no proportionality between the degree of rancidity and its duration. Ketones can be formed in fats under sterile conditions without microorganisms by the action of light, moisture and oxygen of the air. Addition of 0.1 per cent of phenol to acrolein prevents its oxidation and polymerization. Many substances that are oxidized spontaneously in the air can be stabilized by adding small amounts of easily oxidized substances. To prevent development of ketonic rancidity of fats it is proposed (1) to keep the temperature above 80-100°C. to destroy the effect of enzymes and microorganisms; (2) to add antioxidants against the action of oxygen of the air; (3) to add substances that paralyze the effect of enzymes and microorganisms.

The effects of light, moisture and air must be overcome in aldehyde rancidity and anticatalysts must be added which localize the effect of peroxides. A. A. Girshman. *Khim. Referat. Zhur.* 1940, No. 5, 126; through Chem. Abs.

Standard Methods for Soap

The committee on Soap and Soap Products of the American Chemical Society reports standard methods for the sampling and analysis of commercial soaps and soap products. Methods of analysis include the following determinations: Moisture, total matter insoluble in alcohol, free alkali or free acid, matter insoluble in water, total alkalinity of matter insoluble in alcohol, combined alkali-total anhydrous soap, chloride, unsaponified plus unsaponifiable matter, unsaponifiable

matter, unsaponified matter, rosin, preparation of total fatty matter, titer test, acid number of fatty acids, Wijs iodine number, borax, silica present as alkaline silicates, carbon dioxide as carbonates, phosphates, sulfates, glycerol, sugars and starch, volatile hydrocarbons, and combined sodium and potassium oxides. R. E. Divine, J. E. Doherty, C. P. Long, E. B. Millard, M. L. Sheely, H. P. Trevithick, and F. W. Smither. *Ind. Eng. Chem., Anal. Ed.* 14, 558-67 (1942).

Rancidity of Coconut Oil

Maleic acid, disodium phosphate and nipasol (*para*-hydroxypropyl benzoate) were found to inhibit the oxidative rancidity of coconut oil, while zinc chloride and citric acid apparently had no effect, and 1-3 per cent of moisture and cholesterol accelerated the formation of the products of rancidity. pH values showed that the free acidity of the oil has no connection with its rancidity. Also there is no relationship between the Kreis test for rancidity and the thio-sulfate test proposed by Lea. Feliciano L. Roduta and Gregorio Dyogi. *Univ. Philippines Nat. and Applied Sci. Bull.* 8, 211-34.

Fatty Acid Solidification

The solidification points of the fatty acids from caproic to stearic are depressed by the addition of water. The solubility of water in six of these acids is given, with rough approximation of the solubility of water in the other acids of the series. Depression of the freezing point by water is least for stearic acid, greatest for caproic acid, the extent of depression being related to molecular weight. C. W. Hoerr, W. O. Pool and A. W. Ralston. *Oil & Soap* 19, 126-8 (1942).

Pulan Oil

Pulan oil or domba oil is expressed in India from the seeds of *Calophyllum inophyllum*. The Indian samples are dark because of their greater content of green resin; the continental samples are brown. The oil is composed of glycerides of palmitic, stearic and oleic acids. The oil rep-

resents 72.5 per cent of the kernel, the unsaponifiable portion being about 1.5 per cent. Indian samples of the oil have a specific gravity of 0.928 at 15°C., and melt at 8°C. The saponification value is 196, the iodine value 86.0 and refraction index 1.4776. The oil contains up to 15 per cent of resin which can be removed with soda ash. Pulan oil is used in soap making, for lighting purposes and for the local treatment of burns. S. N. Sanyal. *Calcutta Med. J.* 38, 255-8; through Chem. Abs.

Fat Deterioration

The accelerating effect of light on the development of rancidity of fats was verified, and the effects of the intensity of light and wave length were determined. The peroxidase numbers increased in lard samples kept at 38°C. and remained unchanged in samples kept at -10°C. The peroxidase numbers increased in samples of beef fat by the action of salt containing 0.01 per cent of iron. The best antioxidation agents are phenols, amines and alcohols. A. A. Zinov'ev. *Khim. Referat. Zhur.* 1940, No. 5, 125-6; through Chem. Abs.

Recovery of Bone Oil

The aqueous residue obtained after the removal of the oil by gravity from the product resulting from the bone digesters, is caused to separate into glue water and solid matter deposited on the bottom. The glue water is then subjected to a straining operation before mixing it with the aqueous bone-digester residue. The yield of solid matter can be increased still further by centrifuging the glue water in a centrifuge having an imperforate bowl wall. Aktiebolaget Separator, Lever Bros. & Unilever, Ltd., and Bertram R. Bostock. British Patent No. 543,047.

Sulfamic Acid

Use of the newly available sulfamic acid as a laundry sour is covered in British Patent 528,062, 1939 and French patent 853,187, 1939 by Henkel & Cie. M. E. Cupery and W. E. Gordon. *Ind. Eng. Chem.* 34, 792-7 (1942).

Soap in the Laundry

THE first chemical process necessary in the laundry is water softening. The lime-soda process is usually employed because with the ordinary base-exchange type of softener, the bicarbonate alkalinity of the softened water is often sufficiently high to cause trouble during drying and finishing, giving rise to yellow stains on the garments. Zeolite-softened water hardened up to 2-4 degrees by by-passing a certain amount of hard water to the feed-water tank is suitable for laundry boilers. Water of zero hardness when stored at an elevated temperature in large tanks, gives rise to severe corrosion exceedingly difficult to overcome. Although chlorinated rubber paint gives a reasonably satisfactory protective coating, for complete protection the tank must be lined with vulcanized rubber or similar material.

It is difficult to understand why economizers are not used in the laundry industry, also why steam is not superheated in order to prevent condensation in the mains. The fluctuating demand for steam results in considerable losses; the laundry industry appears to be behind the times in that it has not made use of steam accumulators.

The British Launderers' Research Association has for several years been endeavoring to find a good soapless washing process. While some of the sulfated fatty alcohols and similar compounds can be used fairly successfully in the low-temperature washing of lightly soiled goods made of wool, silk or rayon, they are not satisfactory for the high-temperature washing of white cotton goods, even when used with sodium metasilicate, which possesses a very marked suspending power.

The addition of soda ash to the water in the older washing processes had for its object the removal of loose dirt and neutralization of acid. Research indicated that far more rapid and effective results could be obtained by immersing the goods immediately

in a solution of soap. Most soiling matter on clothes behaves as though it has a thin film of grease around it; immersion of the dry fabric in a soap solution results in almost instantaneous wetting.

The removal, emulsification and suspension of the soiling material is effected by adding next sodium acid phosphate to reduce the pH to 7.5-8. At this pH acid soap is formed which is surface-active toward grease, so that intimate mixing takes place. A known quantity of sodium metasilicate solution is then added, which resaponifies the acid soap *in situ*. The dirt particles, now easily detached from the fabric by the mechanical motion of the washing machine, are emulsified by the regenerated soap solution. Sodium metasilicate not only produces the desired pH but does not reduce the suspending power of the soap solution. The emulsified soil is therefore held in suspension and so discharged from the wheel.

By this procedure it has become possible to cleanse a load of soiled goods safely and effectively with considerable economy in water, a 30 per cent saving in time with a corresponding saving in power, and some 40 per cent saving in the quantity of soap. In concrete terms, 100 pounds of soiled cotton or linen goods can be properly washed and given four rinses in 45 minutes, with a consumption of only 10 ounces of soap and one pound of sodium metasilicate. F. Courtney Harwood. *The Industrial Chemist* 18, 209-14 (1942).

Solubilization by Soap

A number of typical detergents, surface-active agents, and other substances were studied in order to determine whether, when added to water, they will greatly increase the amount of hydrocarbon which can dissolve. The result shows that all of the detergents tested exhibit this property of solubilization of such

hydrocarbons as propylene. Much larger quantities of an organic solvent must be added to produce a comparable effect. Salts such as a carbonate, pyrophosphate and hexametaphosphate do not have this property.

The solubilized hydrocarbon is incorporated in or upon the micelles of soap or other detergent. Anion-active, cation-active, and nonelectrolytic detergents greatly increase the amount of hydrocarbon dissolved, in spite of any salting-out action which they may otherwise possess. James W. McBain and A. M. Soldate. *J. Am. Chem. Soc.* 64, 1556-7 (1942).

Bleaching Method

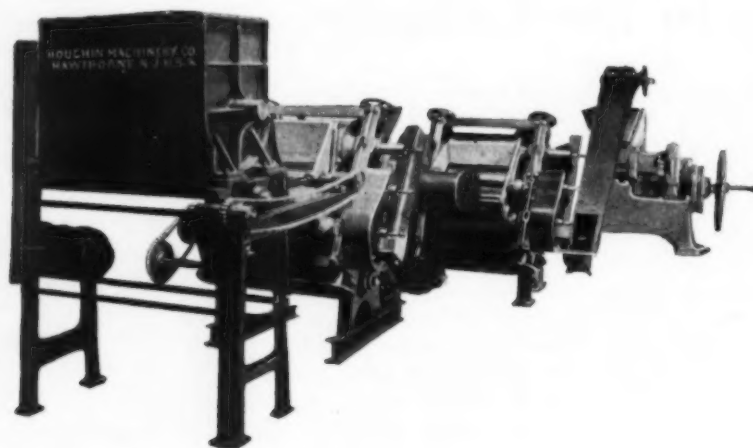
Gray cotton goods are treated with a slightly alkaline hypochlorite solution possessing an alkalinity calculated as sodium hydroxide of less than 0.5 gram of sodium hydroxide per liter, for less than 20 minutes. The goods are then in a condition for subsequent bleaching but are not tendered. They are bleached finally with an alkaline hydrogen peroxide solution. Hans O. Kauffmann, to Buffalo Electro-Chem. Co., Inc. Canadian Patent No. 406,430.

Natural Antioxidants

Antioxidants were obtained from soybean, cottonseed, palm, corn and peanut oil. The concentrates of antioxidants contain the hydroxyl group and a double bond. Treatment with reagents that react with the hydroxyl group or that saturate the double bond destroys their antioxidant properties. S. Z. Engel. *Khim. Referet. Zbur.* 1940, No. 5, 126; through Chem. Abs.

Refining Tall Oil

A petroleum-hydrocarbon solution of crude tall oil is brought into contact with an organic solvent for removing odoriferous and coloring material, such solvent being immiscible with the tall oil solution and consisting of ethylene chlorohydrin, or diethylene glycol, or a chemically similar compound. Ernest Segressmann, to National Oil Products Co. U. S. Patent No. 2,275,186.



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Transparent Soap

EXAMINATION with the polarization microscope by Soviet investigators showed that the glassy condition of glycerine-containing or transparent soaps is due to inhibition of the usual crystallization of the fatty-acid salts, and that the soap represents a metastable system resembling a supercooled melt. Crystallization may supervene as a result of warming the soap or if an unsuitable fat stock such as stearic acid, was chosen.

Household soaps, especially those containing rosin, often show glassy regions in the more rapidly cooled outer parts of the bar. Attempts to produce a uniform transparent soap by very rapid chilling on cooling rolls failed.

Transparency can be obtained by mechanical deformation. A transparent, hard milled soap is obtained without the use of alcohol, by repeated milling and plodding—5 to 6 times—provided the temperature of the soap during these operations does not exceed the upper limit of stability of the vitreous form. This temperature varies according to the composition of the soap. The less the distance between the milling rolls, the greater the degree of vitrification. Transparency, color and hardness of the soap are controlled by regulating the working temperature.

The darker streaks often found in ordinary milled soaps may be due not to uneven distribution of the color, but to patchy formation of glassy soap. Inclusion of castor or coconut oils or rosin in the soap base facilitates development of transparency. *Soap, Perfumery & Cosmetics* 15, 306 (1942).

Oil Dehydration

Hydroxylated vegetable oils or their fatty acids are heated in solution in a volatile hydrocarbon solvent at atmospheric pressure. The liberated water is removed by distillation. The distillate is separated into aqueous and nonaqueous fractions and the non-

aqueous fraction is returned to the heated solution. There may be present as the dehydrating catalyst a normal sulfate of a bivalent or multivalent metal together with phosphorus pentoxide or a compound containing it. E. I. du Pont de Nemours & Co. and Ben E. Sorenson. British Patent No. 542,726.

Orthophosphate Detection

As a result of the investigation of known drop test procedures, a modified strychnine molybdate test was developed which appears superior to other tests for orthophosphate. The new test is identical to the Deniges strychnine molybdate procedure except that the precipitate formed with strychnine molybdate is treated with benzidine as reducing agent in order to establish the presence of phosphorus. Philip W. West and Thomas Houtman. *Ind. Eng. Chem., Anal. Ed.* 14, 597-9 (1942).

Soap as Solubilizer

Soaps, soaplike substances and the innumerable detergents now commercially available, have the property of solubilizing water-insoluble materials, such as an oil-soluble dye. The latter is incorporated in or upon the colloidal micelles of the solubilizing material. There is no connection between wetting power and solubilization. J. W. McBain and R. C. Merrill, Jr. *Ind. Eng. Chem.* 34, 915-19 (1942).

Canadian Sunflower Oil

In 43 varieties of sunflower seeds grown experimentally at the Central Experimental Farm, Ottawa, the average oil content was 27.9 per cent. Of these samples approximately 73 per cent had oil contents above 26 per cent, which level is considered promising for commercial oil production, and approximately 25 per cent had oil contents over 30 per cent. The oil content was not affected by delayed harvesting of the seeds for the purpose

of reducing the moisture content to prevent molding during storage. J. Ansel Anderson. Dept. Trade & Commerce, Canada, Board Grain Commissioners, Ann. Rept. 15, 37-40; through Chem. Abs.

Calcium-soap Emulsifier

One-tenth molecule of *N*-methyl- α -undecylbenzylamine is dissolved in 100 parts of sulfuric acid and cooled to 0°C. At this temperature 26 per cent oleum is introduced. The sodium salt of the sulfonic acid which is formed is a light-colored powder, whose aqueous solutions possess good foaming properties. It can be used as a washing agent and calcium-soap emulsifier. J. R. Geigy A.-G. Swiss Patent No. 211,795.

Fatty Acid Separation

The mixed acids from soybean oil are converted into hydroxamic acids and these are extracted at 0°C. with alcohol, ether, carbon tetrachloride and light petroleum. Characteristics determined on the separated fatty acids indicate that the oil contains 12.3-13.6 per cent of saturated acids as glycerides. Y. Inoue, H. Yukawa and H. Katumata. *J. Agr. Chem. Soc. Japan* 17, 491-3; through Chem. Abs.

Wetting Agent Purification

A dissolved wetting agent is removed selectively from an aqueous solution containing the agent and a larger proportion of an inorganic salt, by treating the solution with an active adsorbent such as activated clay, carbon, silica gel or Fuller's earth. The wetting agent is adsorbed without the inorganic salt and so separated. Oliver M. Morgan, to Allied Chem. & Dye Corp. Canadian Patent No. 406,030.

Improving Wax Color

A powdered crude vegetable wax such as carnauba wax, which has not been melted in its production, is mixed with adsorbent clay or carbon to remove chlorophyll and similar coloring matter. The mixture is heated until the wax becomes molten, and is filtered. John V. Steinle and Elbert S. McLoud, to S. C. Johnson & Son, Inc. U. S. Patent No. 2,275,660.



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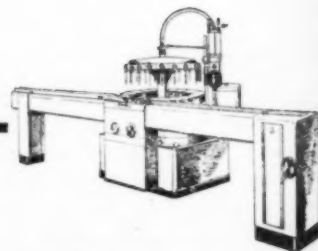
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PRODUCTS

Sulfonated Detergent

A fatty alcohol mixed with a nuclear ketone is treated with an alkali metal at an elevated temperature and pressure. Condensation results, with reduction of the ketone to an alcohol. The product is sulfonated to give a detergent and foaming agent. Hubert Machon. German Patent No. 683,569.

Hard-water Shampoo

A shampoo contains at least one water-soluble salt of an acid ester of monoethanolamine of a fatty acid with a polybasic inorganic acid, and at least one salt of a sulfonated, high-molecular organic compound. It is completely neutral and does not split off any alkali in aqueous solution. It can be completely rinsed out of the hair by means of hard water without forming precipitates detrimental to the gloss of the hair.

In an example the reaction product of sperm oil and monoethanolamine at 150-160°C. is sulfonated with 100 parts of sulfuric acid monohydrate. Ice and alcohol are added and the product neutralized with 25 per cent ammonium hydroxide. After the ammonium sulfate is separated the alcohol sulfonate layer is prepared with water up to 25 per cent and is perfumed. Ammonium salts of coconut oil fatty acids can be embodied into the preparation. Sandoz Ltd. Swiss Patent No. 211,563.

Synthetic Fatty Acids

Synthetic fatty acids of high purity and light color are prepared by subjecting a petroleum wax to limited catalytic oxidation in the liquid phase at about 100-150°C. The oxidation product is saponified with aqueous alkali at about 150°C. under pressure and the unsaponified matter separated from the saponification product by extraction. A small amount of sodium hyposulfite is added to the resulting

aqueous solution of crude soaps and the mixture heated to 90-95°C. for 1/2-2 hours, then quickly acidified with a dilute inorganic acid solution. Synthetic fatty acids of improved color are separated from the acidified mixture. If desired, the soaps may be recovered as the final product. John J. Owen, to Standard Oil Development Co. U. S. Patent No. 2,274,632.

Fatty Acid Distillation

Material such as garbage grease or tallow containing a substantial amount of free fatty acids is distilled continuously at reduced pressure without the use of an added gaseous medium. This separates the original material into a component consisting of most of the free fatty acids in nearly pure form, and a component consisting of undistilled residue. The material is passed through a heating zone where the fatty acids vaporize almost instantly; these are then passed into the hot undistilled residue under reduced pressure, after which the vapors and excess undistilled residue are withdrawn separately and continuously from the zone. Victor Mills, to Procter & Gamble Co. U. S. Patent No. 2,274,801.

Improved Toilet Soap

To a normal toilet soap base is added a minor proportion of a potash soap containing 8-25 per cent of moisture. The mass is agitated in a closed chamber of 65-125°C. and at pressures up to 100 pounds per square inch, then solidified. John W. Bodman, to Lever Brothers & Unilever, Ltd. British Patent No. 539,718.

Soap for Asbestos Yarn

Asbestos yarn, used for making fire-resistant protective garments, tears easily and was formerly knit by hand. A British inventor found that by wetting the yarn with a 5 per cent solu-

tion of soap containing some free fat, the asbestos threads are softened and lubricated sufficiently to permit use of ordinary knitting machines. This makes asbestos suits, gloves, curtains, etc., cheaper to make and available in larger quantities. Bull. Assoc. Amer. Soap & Glycerine Producers, July, 1942.

Laundry Soap

A laundry soap composition is obtained by saponifying a mixture of at least 50 per cent by weight of natural fats and at least 5 per cent by weight of fatty acids. The fatty acids are manufactured by oxidizing solid paraffin hydrocarbons, and have a boiling range of 150-280°C. at 8 mm. of mercury pressure. With the soap is used a builder mixture of sodium silicate and soda ash, with at least 1 per cent of sodium pyrophosphate as a foam stabilizer. Hans Beller and John J. Owen, to Jasco, Inc. U. S. Patent No. 2,274,584.

Textile Detergent

The ester produced from thioxylic acid and the commercial mixture of hexadecyl and octadecyl alcohols is caused to react with chloromethyl *beta*-chloroethyl ether, and is then treated with pyridine. The quaternary ammonium compound can be used as a textile aid. It is a solid, colorless mass which is taken up by warm water to yield solutions which foam upon shaking. Soc. pour l'ind. chim. a Bale. Swiss Patent No. 211,246.

Bottle-Washing Compound

A detergent composition for washing milk and beer bottles comprises sodium aluminate and magnesium sulfate. Harold A. H. Crowther. British Patent No. 540,528.

Oil Extraction

Oil-containing substances are preground and then extracted with an appropriate solvent in a sequence of operations consisting of alternating further grinding in the presence of the solvent, and pressing. Joseph Reichert. German Patent No. 682,912.

PATENTS

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No. 2,288,804, Method of Producing Detergents, patented July 7, 1942 by Torsten Hasselstrom, Savannah, Ga., assignor to G. & A. Laboratories, Inc., Savannah, Ga. The method of preparation of a purified sulfonic acid which comprises treating pseudopimaric acid with a sulfonating agent under sulfonating conditions, treating the resulting sulfonated pseudopimaric acid reaction mixture with water at a temperature below about 100°C. to precipitate pseudopimaric sulfonic acid in crude form, washing out excess sulfonating agent from the precipitate, treating the crude pseudopimaric sulfonic acid with a calcium salt reactive therewith to form a calcium salt of the pseudopimaric sulfonic acid as a precipitate phase, extracting essentially neutral resin material from the calcium salt maintained in the insoluble state with an organic solvent for the neutral resin material, adding acid to the purified pseudopimaric sulfonic acid calcium salt to form free pseudopimaric sulfonic acid and a water-insoluble calcium salt, and separating the calcium salt from the pseudopimaric acid sulfonate by dissolving the latter in aqueous alkali.

No. 2,288,810, Mildewproofing and Mothproofing Treatment, patented July 7, 1942 by Martin Leatherman, Hyattsville, Md. An article of manufacture comprising a rubberized fabric impregnated with a mildewproofing agent compatible with rubber, the

agent having as its essential active ingredient a cadmium containing compound.

No. 2,289,064, Insecticide, patented July 7, 1942 by Walter C. O'Kane, Durham, N. H. The method for mothproofing woollens against insect pests which comprises forming an insecticidal composition comprising as a carrier for the toxicant a low boiling colorless volatile organic liquid, an organic thiocyanate toxicant, and a dispersing agent soluble in the liquid which will emulsify the composition in water, dispersing from 4 to 20 per cent of the composition as an emulsion in water, subjecting woollens to be protected to the emulsion while maintaining the emulsion at a temperature of above about 140° F. and drying the treated woollens.

No. 2,289,392, Polish, patented July 14, 1942 by Joseph A. Tumbler, Baltimore, Md. A polish composition in the form of an oil in water emulsion comprising water as a continuous phase and a petroleum distillate as a discontinuous phase, and dispersed in the petroleum distillate a condensation product of oil selected from the group consisting of castor oil and croton oil, and an acid selected from the group consisting of, phenol, cresol and phthalic anhydride, the condensation product of oil and acid being insoluble in the petroleum distillate and insoluble in the water.

No. 2,289,578, Alkaline Cleaning Composition, patented July 14, 1942 by Harry H. Hull, Chicago Heights, and Joseph Panota, Jr., Crete, Ill., assignors to Diversey Corporation. A composition of matter for use on automatic washing machinery employing hot detergent solutions in connection with hard water consisting essentially of a predominant proportion of a caustic alkali, a relatively small proportion of an alkali metal pyrophosphate and an alkali metal orthophosphate, the amount of the caustic alkali being at least 70 per cent of the specified ingredients, and the ratio of pyrophosphate P_2O_5 to one part of orthophosphate P_2O_5 being between approximately 3 to 12 parts by weight, whereby scale formation on the automatic washing machinery is substantially prevented.

No. 2,290,235, Pest Control, patented July 21, 1942 by Hubert G. Guy, Newark, Del., assignor to E. I. du

Pont de Nemours & Co., Wilmington. The method of conditioning horticultural spray suspensions for obtaining heavy uniform spray deposits, which are not readily washed from foliage by rain, of organic feeding inhibitors containing a thiuram sulfide which comprises dispersing in water — a water insoluble organic feeding inhibitor containing a thiuram sulfide, a water-soluble salt of a non-oxidizing metal the hydroxide of which is insoluble, and lime in proportions of not more than four parts for each part of the water-soluble salt figured as anhydrous, the salt being such that on interacting with lime to form the hydroxide and insoluble calcium salt is formed.

No. 2,290,908, Shampoo, patented July 28, 1942 by Harrison Gunning, Brooklyn. A foaming soapless shampoo comprising substantially the following proportion of ingredients:

	Grams
Water	57.00
Citric acid	0.15
Boric acid	0.10
Sodium bicarbonate	1.20
Ethyl alcohol 95%	43.00
Menthol	0.06
Borneol	0.04
Carvacrol	0.07
Tertiaryamylphenol	0.07
Geraniol	0.03
Oil of bay, terpeness	0.03

No. 2,291,192, Insecticide, patented July 28, 1932 by Lloyd E. Smith, Washington, D. C., assignor to Henry A. Wallace, Secretary of Agriculture of the United States of America and his successors in office. As insecticide containing as its essential active ingredient one of the class of compounds known as xanthenes.

No. 2,291,193, Insecticide, patented July 28, 1942 by Lloyd E. Smith, Washington, D. C., assignor to Henry A. Wallace Secretary of Agriculture of the United States of America, and his successors in office. An insecticide containing as its essential active ingredient one of the class of compounds known as xanthenes.

No. 2,291,194, Insecticide, patented July 28, 1942 by Lloyd E. Smith, Washington, D. C. assignor to Henry A. Wallace, Secretary of Agriculture of the United States of America and his successors in office. An insecticide containing as its essential active ingredient one of the class of compounds known as Xanthidrols.

No. 2,291,473, Mothproofing Solution, patented July 28, 1942 by Hilton Ira Jones, Wilmette, Ill. A stable aqueous mothproofing solution containing as its essential ingredients magnesium silicofluoride and magnesium benzene sulfonate.

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U.S.I. CHEMICAL NEWS

September ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries

★ 1942

Indian Plant Lore May Provide Source Of Novel Perfumes

Possibility of Distinctively American Fragrances Foreseen

Novel perfume fragrances, distinctively American in character, may have their origin in the knowledge of aromatic plants possessed by the Indians of Arizona and adjacent states, it has been suggested as a result of recent studies by the Department of Agriculture.

The ancient plant lore of the tribes of the Southwestern portion of the United States is believed to include considerable knowledge of drug and aromatic principles which are unknown in most pharmacopoeias. This fact acquires special importance in view of the current shortage of many natural perfume

(Continued on next page)

Paint Reclamation Urged As Aid to Conservation

Reclamation of spray paints has been suggested by the War Production Board as a step in the conservation of chemicals important in war production.

Large quantities of nitrocellulose, pigments, resins, plasticizers and other materials can be recovered by reclaiming the sludge formed by the surplus paint in spray booths, it is believed. Satisfactory procedures and adequate equipment for the reclaiming process are believed to exist.



Surplus paint used in the spray process may serve as a source for the recovery of many important chemicals.

Ethanol, Acetone Used in Sulfanilamide Preparation

Ethanol and acetone are used in a sulfanilamide preparation recently described in England as being especially useful for a throat paint or spray. The preparation has the following proportions:

Sulfanilamide	1.7 gm.
Ethanol (90%)	7.5 cc.
Acetone	7.5 cc.
Glycerine, to make.....	100.0 cc.

Phthalate Plasticizers Under Total Allocation

Phthalate plasticizers, used in the manufacture of lacquers, plastics, and other products, have been placed under total allocation control under the terms of an order which became effective September 1. U.S.I. products affected by the order include diamyl, dibutyl, and diethyl phthalates.

New Coating Composition Prevents Color Bleeding

SOUTH RIVER, N. J.—The tendency of coating compositions containing asphaltic materials to "bleed" into the finish coat can be almost completely eliminated by the use of a recently patented composition, it is claimed.

The new composition is applied as an intermediate coating, and is said to provide good adhesion for the top coat. Its effectiveness in preventing bleeding is reported to depend on the presence of activated carbon. A number of possible formulations are suggested in the patent, the simplest of which employs the activated carbon in a solution of shellac in Specially Denatured Alcohol 23A.

Tests are said to show that such compositions are highly effective in preventing discoloration of top coats, even when the undercoat contains coloring materials which usually cause severe "bleeding."

Urethan Aids in Forming Barbituric Acid Solutions

The presence of a relatively large quantity of a carbamic ester, such as urethan, is helpful in forming concentrated stable solutions of barbituric acids, according to a recent British patent.

As a typical example of the procedure, 20 grams of 5-isobutyl-5-allylbarbituric acid, 5.5 grams of monoethanolamine, and 50 grams of urethan are dissolved at room temperature in 34 cc. of water. A stable solution, containing 20% by volume of isobutylallylbarbituric acid is reported to be obtained.

Urethan is produced by U.S.I.



pH determinations are among the many tests conducted by U.S.I. as part of its rigid control of production processes, to assure high quality of its products.

Resin Emulsions Seen as Possible Latex Substitutes

Suggested for Use in Coatings, Adhesives, Other Applications

PEABODY, Mass.—Resin emulsions display interesting potentialities as substitutes, extenders, and modifiers for latex in a variety of applications, according to a manufacturer here.

Adhesives, binders and fillers, grease-proofing, waterproofing, impregnating, and coating compounds are among the uses in which the resin emulsions are said to have excellent results. In the field of coatings, they have been employed to produce adherent coatings, either pigmented or clear, for paper, fabric, and rubber, and as intermediate coats for lacquer on rubberized cloth. In latex-treated papers, they are reported to give increased strength and improved ageing characteristics. Typical applications among adhesives include those for paper, leather to cloth, and cloth to cloth.

These emulsions are described as available in a variety of forms, including alkyds, maleics, and acrylics, for a wide range of applications.

Color of Oils and Waxes Improved by New Process

SARNIA, Ont.—The effectiveness of clay, fuller's earth, and similar adsorbent materials in improving the color of oils and waxes is materially enhanced by wetting the adsorbent with an aliphatic alcohol, particularly ethanol.

This discovery has been made by an inventor here, who has received a patent on the process. The process can be utilized, according to the inventor, either to obtain a good color reduction with less adsorbent material, or to obtain a greater color reduction with the same amount of material. The method is expected to be particularly applicable to the refining of waxes in which extremely light color is desirable.

September

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U.S.I. CHEMICAL NEWS

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1942

Shear Strength Tests Suggested to Evaluate Solvents for Plastics

LOS ANGELES, Calif.—Determination of shear strength has been suggested here as a simple method of evaluating the effect of organic solvents on various types of plastics.

While considerable data have been massed on the effect of solvents on plastics, it has been pointed out that this information has been largely of a quantitative nature, classifying the plastic as soluble, partly soluble, or insoluble in the solvent.

The shear strength determinations are reported to offer an easily applied technique for obtaining quantitative data on solubility, and thus obtaining comparative information on the effect of various solvents. Information thus obtainable may be helpful in a variety of industrial applications, such as the formulation of lacquers and adhesives.

Suggests Black Cosmetic Cream for Commando Use

LONDON, England—The possibility that the cosmetic industry may find a new outlet for its products, through the development of a black cream to cover faces of Commandos during night raids, has been suggested by a trade journal here.

Such a cream, it is pointed out, should be non-irritating and easily applied, capable of application to the eyelids without harmful effects, and displaying good adhesion in the presence of perspiration.

Indian Plant Lore May be Source of New Perfumes

(Continued from previous page)

materials which have been widely used in the past. However, if further studies bear out the possibility of utilizing perfume materials from these newer sources, their use will probably not be confined to the present emergency. Since they may offer a starting point for products with definitely new odors, they may find a permanent place for themselves in perfume manufacture.

It has been suggested that the Indians, on the basis of their ancient knowledge, may distill the aromatic oils for subsequent fractionation and blending by Government laboratory workers.

Plastic May be Employed For Rubber Conservation

ST. LOUIS, Mo.—Much of the rubber previously used in rubberized fabrics may be successfully replaced by a novel plastic, it has been reported here.

The plastic, it is said, can be so compounded that it can be applied to fabric with the same equipment and processes used for rubber, thus eliminating the need for new machinery or techniques. Fabrics coated with the plastic have already been used for military raincoats, hospital sheeting, life-preserver jackets, and water bags, it is claimed. In the case of military raincoats, it is said that the plastic-treated fabrics have the added advantage of resulting in a lighter-weight coat than the present rubberized materials. Effectiveness of waterproofing is described as being at least equal to that of natural rubber.

Ethanol Used in Depositing Metal on Cellulose Esters

LONDON, England—A method for depositing metals, such as silver, gold, platinum, or copper, on the surfaces of cellulose esters is described in a patent recently issued here. The surface of the cellulose ester is pretreated with a bath containing a stannous compound dissolved in a mixture of ethanol and water, according to the patent. Water content may range between 5% and 80% of the bath.

Describes Hand Lotion For Dermatological Use

DETROIT, Mich.—A new hand lotion, said to have unusually desirable qualities for dermatological use, is described here as having the following proportions:

Stearic acid	1.75 gm.
Glycerine	1.00 cc.
Cholesterol base	0.50 gm.
Cetyl alcohol	0.50 gm.
Triethanolamine	0.15 cc.
Alcohol (15%), to make	100.00 cc.

After the stearic acid and triethanolamine are allowed to react, the cholesterol, cetyl alcohol, and glycerine are added. The mixture is melted and the alcohol added.

One advantage of this lotion is said to lie in the fact that the emulsion displays no tendency to break down. In addition, the lotion is said to tolerate a variety of dermatological medicaments, such as calamine, zinc oxide, kaolin, salicylic acid and boric acid.

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

Copper oxide scale is easily removed from the surface of brass by means of a chemical compound now in commercial production, it is reported. It is said to remove the stains quickly and with little loss of metal. (No. 610)

U S I

Lubricating and rustproofing properties are said to be combined in a new liquid intended for application to steel. The liquid provides lubrication comparable to that offered by soluble oils, and dries to a protecting film to prevent rusting prior to shipment. (No. 611)

U S I

A stop-off lacquer is designed for application to steel pieces that are to be locally hardened, according to the manufacturer. Lacquer is applied to areas to be hardened, after which piece is copper-plated. Plated areas remain soft; lacquer prevents plate from forming on areas to be hardened. (No. 612)

U S I

Cleaning of plastic surfaces is readily accomplished by means of a new material, it is claimed. Cleaner is said to remove grease, gum, paint, and other foreign materials from the surface of the plastic, without harming the plastic itself. (No. 613)

U S I

A protective coating is said to display high resistance to the effects of weather, hot oil, alcohol, inorganic acids, caustics, and ultraviolet rays. It is also reported to show unusual arc resistance, high dielectric strength, and extreme flexibility. Coating contains materials said to be available on priority ratings of A-3 or better. (No. 614)

U S I

A single-coat paint is reported to prime, seal, and finish any interior surface in a single operation. It can be applied over plastic, concrete, brick, wallboard, and metal, and has sufficient hiding power for application over dark surfaces, according to the maker. (No. 615)

U S I

A new window material consists of wire mesh enclosed by plastic. Maker says that sheet is transparent, insulates against heat, transmits ultra-violet rays, displays high shock resistance. (No. 616)

U S I

Weatherproofing of prefabricated metal shapes can be accomplished by a new process said to afford a high degree of protection against corrosive atmospheres. Process is applied only to prefabricated shapes in order to avoid possible rupture of bond. (No. 617)

U S I

A blood-clotting agent is now available for the use of doctors and dentists in stopping the flow of blood from small wounds. It is said to be the natural clotting constituent of blood separated in highly concentrated form from clear blood plasma. (No. 618)

U S I

A perilla oil substitute available from a domestic source is said to offer a satisfactory replacement for a product now difficult to obtain. (No. 619)

U.S.I. INDUSTRIAL CHEMICALS, INC.

60 EAST 42ND STREET, NEW YORK



BRANCHES IN ALL PRINCIPAL CITIES

ALCOHOLS

Amyl Alcohol
Butanol (Normal Butyl Alcohol)
Fusel Oil—Refined

Ethanol (Ethyl Alcohol)

Specially Denatured—All regular and anhydrous formulas
Completely Denatured—all regular and anhydrous formulas
Pure—190 proof, C. P. 96%, Absolute

U.S.I. Denatured Alcohol

Anti-freeze

Super Pyro Anti-freeze

Solox Proprietary Solvent

Solox D-I De-icing Fluid

ANSOLS

Ansol M
Ansol PR

ACETIC ESTERS

Amyl Acetate
Butyl Acetate
Ethyl Acetate

OXALIC ESTERS

Dibutyl Oxalate
Diethyl Oxalate

PHTHALIC ESTERS

Diamyl Phthalate
Dibutyl Phthalate
Diethyl Phthalate

OTHER ESTERS

Diatol
Diethyl Carbonate
Ethyl Chloroformate
Ethyl Formate

INTERMEDIATES

Acetoacetanilide
Acetoacet-ortho-aniside
Acetoacet-ortho-chloranilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloranilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate

ETHERS

Ethyl Ether
Ethyl Ether Absolute—A.C.S.

OTHER PRODUCTS

Acetone
Colloids
Curbay B-G
Curbay Binders
Curbay X (Powder)
Ethylene
Ethylene Glycol
Nitrocellulose Solutions
Potash, Agricultural
Urethan
Vacatone

Registered Trade Mark



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on the manufacture of Fine Chemicals, Drugs, Antiseptics; Patent Medicines, Pills, Tablets, Invalid Foods, tonics; ointments, lotions, dentifrices; Detergents, disinfectants, fumigants, insecticides, fertilisers, animal medicines; Fine Soaps, Toilet Goods, Shaving Soaps, medicated soaps, laundry and industrial soaps, Polishes, Photographic Chemicals, Essential Oils, Perfumes, Cosmetics, Hair Preparations, Pharmaceutical Accessories, Bath Salts, Powders, eye and manicure preparations.

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RESEARCH has proved two things—(1) Malmstrom's Nimco Brand Lanolin is better for 5 big reasons—A-N-D (2) Malmstrom's Nimco Brand Lanolin is America's No. 1 choice . . . *the largest selling Lanolin in the U.S.A.*

Today, when quality standards are harder to maintain,

**America's
No. 1 Choice
Because It's
5 WAYS
BETTER**



Malmstrom has a greater responsibility than ever before . . . for today Malmstrom has *more* customers to satisfy *than ever before*.

To this endeavor, we pledge our efforts, our experience and our resources so that

American Industry can benefit from Malmstrom improvements in the quality and value of Nimco Brand Lanolin and allied products.

1. LOWEST **ODOR** VOLUME
2. GREATER **UNIFORMITY**
3. BETTER **COLOR** QUALITY
4. SMOOTHER **TEXTURE**
5. FINER **BODY** CONSISTENCY

N. I. MALMSTROM & CO.

America's
Largest
Suppliers of



LANOLIN • Anhydrous U.S.P. • Hydrous U.S.P. • Absorption Base • Technical
DEGRAS • Neutral and Common • **WOOL GREASES**

147- LOMBARDY STREET • BROOKLYN, NEW YORK

STOCKS CARRIED IN CHICAGO • KANSAS CITY • MINNEAPOLIS • LOS ANGELES • SAN FRANCISCO

EQUIPMENT

IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York, mentioning the number of the item.

898—Fats and Oils Report Out

The Bureau of the Census of the United States Department of Commerce has just published a booklet on animal and vegetable fats and oils. It contains quarterly figures on the production, consumption, imports, exports and stocks for the calendar years 1937 to 1941. In the interest of national defense, statistics for imports and exports for the last quarter of 1941 were not published. Copies may be obtained from the Superintendent of Documents, Washington, D. C., for 10 cents.

899—Good Housekeeping Book

Good Housekeeping magazine, New York, has just brought out a new book describing and picturing the operations of its Institute and Bureau, and the functions of the product use and development division. Of particular interest to soap makers are the soap and laundry testing facilities of the laboratory. Copies of the book are available by writing to *Good Housekeeping*, Product, Use and Development Division, George W. Alder, director, 57th St. at Eighth Ave., New York.

900—Review Industrial Soap Use

"Industrial Uses of Soap" is the title of a mimeographed bulletin, issued by the Association of American Soap & Glycerine Producers. Outlined in its three pages are reports of seven industrial processes which utilize soap. Further similar bulletins are to follow from time to time, the Association announced, the idea being to familiarize technicians with the possibilities for

utilization of soap where customary chemicals and raw materials have been restricted or eliminated by war demands.

901—Van Dyk Explains L-171

Van Dyk & Company, Jersey City, manufacturers of perfumery and cosmetic raw material, have just brought out a simplified, yet complete version of general limitation order L-171, covering the production and sales of toiletries and cosmetics, which was issued July 17, 1942. Copies of this booklet are available to any interested manufacturers who write to the firm at 57 Wilkinson Ave.

902—Magnus Address Available

"Social Deodorants," an address by Percy C. Magnus, president of Magnus, Mabee & Reynard, essential oil dealers, New York, delivered before the Tennessee Pharmaceutical Association, June 24, 1942, at Knoxville, is now available in booklet form. It is a sequel to "Synthetic Thinking," the keynote address at the annual meeting of the New York State Chocolate and Confectionary Association, February 19, 1942.

903—New Hercules Booklet

A new 21-page booklet discussing properties and applications of a series of terpene solvents has just been issued by the Naval Stores Department of Hercules Powder Co. Included in the booklet are technical graphs on A.S.T.M. boiling ranges and distillation ranges and on the evaporation rates of Hercules terpene solvents. Structural formulae are pictured, together with tables of typical analyses citing specific gravity, refractive index, unpolymerized residue, flash point, Kauri-Butanol solvency value, aniline point, Ubbelohde viscosity and color.

Solvency, volatility, flash point, odor, stability, drying time, flow,

sagging, lifting and skinning are discussed generally.

Refining Carnauba Wax

A powdered crude vegetable wax such as carnauba wax, which has not been melted in its production, is screened through one or more screens of 40-60 mesh to remove fine leafy and other non-waxy material. After this it is purified further by melting. Herbert F. Johnson, Jr., John V. Steinle and Robert P. Gardiner, to S. C. Johnson & Son, Inc., U. S. Patent No. 2,275,630.

Protective Hand Creams

(From Page 21)

perfume is added, preferably not too "sweet" or flowery odor. Pine or other "antiseptic" type odors are preferred.

Two creams suggested which contain petrolatum where a greasy product is not objectionable, are the following:

I.

	Parts
Lanolin	20
White chip soap.....	8
Glycerine	2
Petrolatum white	3
Zinc oxide	2
Water	65

II.

	Parts
Petrolatum	13
Glycerine	5
Talc	20
White chip soap.....	7
Water	55

In these creams, dissolve the soap in the warm water and add the glycerine. Work up the pigment, talc or zinc oxide in part of the water and stir into the mass thoroughly. Add the melted petrolatum gradually with constant stirring. Vary consistency if desired by increase or decrease in water or pigment content. Suggested perfumes are of the pine or eucalyptus type. All-told, a thousand and one composition possibilities present themselves of which those given here are a very few.

After noting the various possibilities in compounding, the manufacturer may very well apply his own ideas in developing a formula. The question then is, will his product do what he wants it to? A very practical method of answering this question is

VALENCIA—The Standard of American Pumice



STANDARDIZE ON VALENCIA FOR ALL TIMES
The Valencia Mine at Grants, New Mexico — an inexhaustible deposit, and with grinding facilities to take care of every need.

It's not a substitute for the now unobtainable Italian pumice but is chemically and physically equal in every respect. Note its comparison.

	American Pulverized Per Cent	Italian Select Per Cent
Silica	72.90	73.24
Alumina	11.28	10.61
Iron Oxide .....	.86	1.57
Titanium Oxide .....	.06	.10
Calcium Oxide .....	.80	1.10
Magnesium Oxide .....	.36	.40
Soda	3.64	3.03
Potash	4.38	5.58
Sulfuric Anhydride ...	.03	.05
Loss on ignition.....	5.20	4.04

Valencia is a true pumice stone and not a volcanic ash.
VALENCIA PUMICE IS A UNIFORM PRODUCT IN ITS HIGH QUALITY. ITS SUPPLY IS UNLIMITED.

PUMICE CORPORATION OF AMERICA

GRANTS, NEW MEXICO U. S. A.

WHITTAKER, CLARK & DANIELS, INC. • 760 WEST BROADWAY • NEW YORK CITY
WAREHOUSES: DETROIT MICHIGAN • CINCINNATI OHIO • KANSAS CITY MO.



In producing flakes for granulated soaps, toilet cakes or packaging, high speed output can often be an item of great saving. With the New Proctor Flake Soap System, from the hot liquid soap in the kettle or crutcher to the dried flakes requires only 6 to 14 minutes and capacities may be obtained from 750 to 6000 lbs. per hour, according to flake thickness, character of soap, etc. At this stepped-up production, quicker deliveries are assured and there are tremendous savings in floor space and equipment. Complete details are contained in a new 16-page illustrated catalog that is yours for the asking.

PROCTOR & SCHWARTZ INC • PHILADELPHIA

NEW PROCTOR *Flake Soap* SYSTEM

to massage the cream into one hand but not the other, rub both hands with colloidal carbon, then wash with soap and water. If the cream is really protective, the hand to which it was applied should wash clean, while the unprotected hand will show an adhering film of black deposit even after thorough washing. When a scrub brush was used and an abrasive soap, under moderate magnification the skin still showed particles of carbon firmly lodged within the mouths of hair follicles of the unprotected hand.⁴

If the cream is intended not to rub off, a test of this is to rub it into the hands and then handle white paper, on which any grease marks will show readily.

The suggested formulas may have to be modified according to the availability of ingredients, as well as cost. This makes careful testing of the finished product important. Various types of soil such as paints, dyes, tar, oil, etc., can be applied to the hands and tested in the same way as mentioned for colloidal carbon, which represents adherent solid soil.

As a matter of maximum efficiency as well as maximum comfort and health, factory workers should be educated to the proper care of their hands. Use of a good protective cream seems a forward step in this direction.

Ed. Note: Such protective hand creams as have been on the market have been packed in round tin cans similar to the standard hand soap can. Such packages are of course not available today. The glass jar appears to be the only suitable available package, unless a paper can suitably treated inside might be used. These protective creams may be considered cosmetics by the Government under the Food, Drug & Cosmetic Act, even though their purpose is solely that of a protective coating on the skin with no intent to beautify, soften or improve the skin. This raises the question whether any such new products may be brought to market today. Permission from the War Production Board would certainly be the safe path for any manufacturer with such ideas in mind. Labeling should be ultra-conservative

with no claims of a cosmetic or medicinal nature, confining label directions to explaining the purpose and how to use the product,—and *do not say that it is positive protection for the hands or that it definitely will do anything*, avoid praising it, etc. In short, leave out the hot air and tell only what the product is designed to do and how and when to use it and remove it.

Fat Salvage Plan

(From Page 29)

Washington a few days later, he had the pledged financial support of 120 producers of glycerine, soap and fatty acids. It was through his practically single-handed efforts that the fund was raised, and the campaign was ready to go into production. At this point a separate corporation was formed to handle the funds, deal with any problems, etc. It is the Committee of Glycerine & Associated Industries To Salvage Waste Fats, Inc., and is headed by Roy Peet of Colgate-Palmolive-Peet Co.

Besides its own straight all-waste-fats salvage advertising, the Committee of Glycerine & Associated Industries set aside \$50,000 to be used in the \$2,000,000 United Salvage Campaign in which waste fats are mentioned along with scrap metals, rubber, etc. The United Salvage Campaign had, in the opinion of the Association of American Soap & Glycerine Producers, perhaps the widest newspaper coverage of any campaign in advertising history. Every daily newspaper in the United States is on its schedule, plus every weekly newspaper in communities where there are no dailies. Some 9000 newspapers are used with the result that the united salvage message, including waste fats salvage, is being placed before every newspaper reader in the entire United States. Supplementing the newspaper coverage are advertising messages in *Time*, *Life* and *Collier's* magazines, in which the fats conservation space is included in united appeals.

The all-waste-fats salvage newspaper advertising schedule called for advertisements to appear in more than 415 newspapers in 205 cities, having

a population of 50,000 or more, throughout the length and breadth of the United States. The advertising campaign was launched on Wednesday, June 24, in Chicago, naturally, since it was the site of the original waste fats salvage drive. Because of this, some details of the campaign conducted there differed slightly from those in other sections of the country. Prior to the appearance of actual paid advertising, a veritable flood of "free publicity" preceded the general drive. Both international press associations and independent local stories and pictures filled the papers of the nation with the workings of the coming salvage campaign. Stories of varying length and aspect ran in papers throughout the nation from the *New York Times* to the *Waukegan (Ill.) News-Sun* telling and re-telling the story. Radio announcements of the drive, although not officially tabulated, were numerous, and contributed their share in familiarizing householders all over the land with the coming household waste fats salvage campaign.

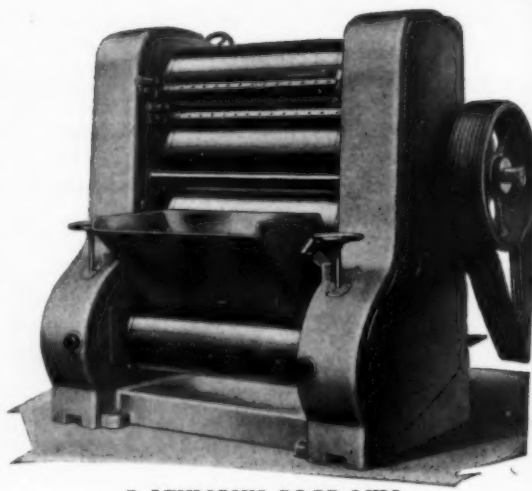
IN order for such a campaign to succeed, it is also necessary to set up some sort of "distribution" system,—in this case reversed, a collection plan. Wherever advertising was scheduled to appear a local organization had to be set up to do personal contact work and cope with whatever problems might come up whether they were of a local or national nature. This was done in many ways. Number one was through the salvage division of the W.P.B. which in cooperation with the O.C.D. has 11,000 community committees, all of which were requested to select and appoint fat salvage workers, each of whom was given definite tasks to perform.

One of the principal functions of the worker, usually a woman,—since this whole effort has been a direct appeal to women,—is to contact other women to explain the how, and whys. This was usually through the medium of women's clubs and similar organizations where one woman could contact a large group without the duplication of effort required in

⁴ P. B. Mumford, *Brit. Medical J.* 1939, 266-7.

"INCREASE PRODUCTION" Is the Order of the Day!

ONE way to increase production is by employing the full capacity of your sturdy LEHMANN equipment. Though materials for making new machines are limited, you need have no fear regarding the continuous performance of your present LEHMANN Mills. They seldom fail; and in such a rare event our Repair and Maintenance Department is prepared to restore them to full capacity production speedily.



A LEHMANN SOAP MILL

"Let's Keep 'Em Running"

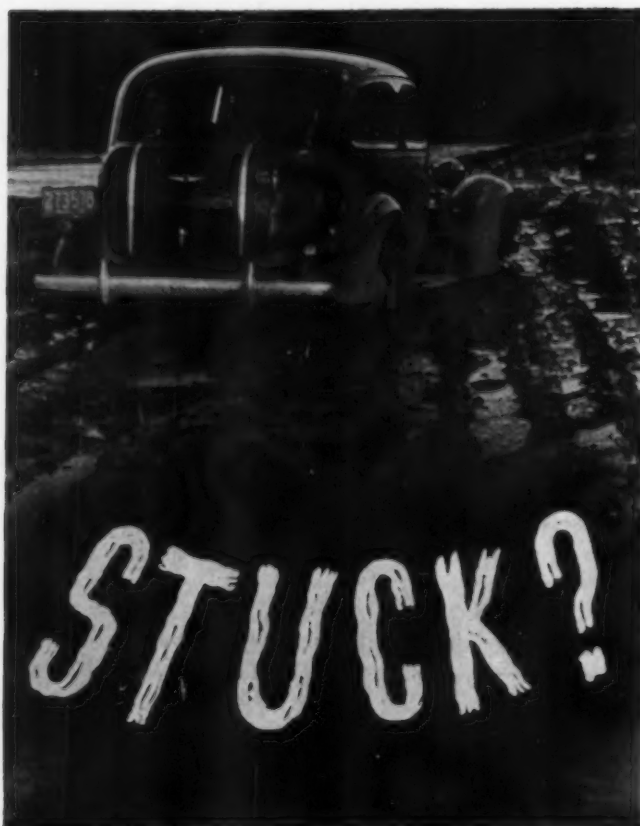
J. M. LEHMANN COMPANY, INC.

250 WEST BROADWAY

NEW YORK, N. Y.



The Standard for Quality
in Machinery Since 1834



... call D & O

— and who hasn't been stuck or hampered by some of today's many perfuming problems? We of Dodge & Olcott Company are meeting many of these perplexities by supplying the trade with important, necessary requirements of Aromatic Chemicals, Essential Oils, and Perfume Compounds. Most likely our 144 years of perfuming experience can likewise help YOU through the current emergencies with "flying colors." "Call D & O."



DODGE & OLCOTT COMPANY

180 VARICK STREET • NEW YORK, N. Y.

BOSTON • CHICAGO • PHILADELPHIA • ST. LOUIS
LOS ANGELES

Plant and Laboratories: Bayonne, N. J.

door-to-door calls. However, this latter means was not overlooked either.

The second method was through active chain store cooperation. In this instance splendid support was lent by such national chains as the A&P, Kroeger, Safeway, Ralston, American, First National, National Tea, Bohack, Fisher Brothers and other chain store groups. These stores not only cooperated to the extent of collecting and informing women as to the best means, etc., of collecting and delivering their waste fats, but they also used advertising mats furnished by the committee and ran them in their regular advertising at no cost to the committee. Nor can the efforts put into the thing by the independent stores be overlooked as a contributing factor in the success of the campaign.

A third phase in this preparatory drive to have the "Points of collection" ready was the all-out support of the American Meat Institute, meat dealers associations, both national and local, and the rendering trades themselves. Local representatives of the Meat Institute distributed, by personal contact, more than 25,000 copies of the portfolios containing reprints of the advertising that was to appear, display material for the meat dealer including: window cards, door or window stickers, easel-backed counter display cards, all in full color, and advertising mats which were available on request by mailing in an attached card.

Immediately preceding the appearance of the first advertisement, a survey was made to see what per cent of the meat dealers had received all the display and advertising material and were set up and ready for the opening gun in this nation-wide salvage drive. It was estimated that between 80 and 90 per cent of the meat dealers checked were ready. In New York City, alone, two to three check-ups were made before the initial ad appeared. Then, when it was felt that the local situation was in complete readiness, and not until then, the first advertisement appeared.

The first advertisement, designed to prepare the public for the coming campaign, was a direct appeal

in the form of an open letter to meat dealers everywhere to cooperate. The letter explained that the campaign was to begin soon, that the country needed the glycerine to make explosives, and went on to describe the process of collecting and disposing of the waste fats, and showed how the meat dealer is a key to the success of the plan. It was signed by the Chairman of the State Salvage Committee and the Chairman of the local committee. The illustration run next to the letter showed Uncle Sam with his arm around the shoulder of a white aproned meat dealer. In the foreground was the symbol of the whole campaign: the frying pan pouring its grease directly into the breach of a piece of field artillery.

Among the 415 newspapers in the 205 cities in all the 48 states and the District of Columbia, Fat Salvage advertising is appearing before an estimated total circulation of 33,134,682. Schedules vary from a few insertions totaling 2,500 lines in smaller communities up to eight or more insertions aggregating up to 7,750 lines in larger ones. These figures do not include those of the United Salvage Campaign or the advertising placed by the chain stores using the mats supplied by the committee. Naturally, there will be some duplication, but with the extensive coverage of the united appeal, no hamlet will be missed.

Radio and motion pictures participated in the waste fats salvage campaign, too. On the radio front, 53 scheduled announcements were made on the nation-wide hook-ups of the National and Columbia Broadcasting Systems every day from August 10 to 21. All of these are popular programs that have large followings especially among the women of the country. In addition to this schedule, local announcements have been arranged on not less than 200 broadcasting stations, and in some cases a considerable amount of time has been given to the details of the campaign.

No avenue of dissemination of information has been overlooked in spreading this saving of household waste fats idea. Even the movies are

contributing a share of their time and talent. For the benefit of moviegoers, Walt Disney has prepared a technicolor short: "Out of the Frying Pan Into the Firing Line." RKO-Radio Pictures is the distributing agent for this film which began showing in the latter part of August and is scheduled to be seen in an estimated 15,000 moving picture theatres throughout the entire country.

Besides printing more than 30 million consumer flyers, the W.P.B.'s Conservation Division produced 672,000 two-color, one-sheet fat saving posters that were distributed in August on a nation-wide scale.

Apart from the first newspaper advertisement in the campaign, all were designed with a direct frontal appeal to women, since it was felt that women would respond best if they knew they were doing something that would be a direct help to the boys in the service. Thus, some of the headings on the ads say: "A war job only a woman can do!" or "Lady, Don't Throw Out That Grease! It'll Make Gunpowder to Stop the Japs!" or "Your Family's Waste Kitchen Grease May Bag An Enemy Plane!; Good For You, Mom! Save Those Kitchen Fats to Make Shell-Fire,—The American Woman's Call to Arms; Save Kitchen Grease for Gunfire!", etc. In this way women were made to feel that they were part of the struggle in a very direct and necessary way. Their contact with the war was a more intimate one than ever before. It made them feel that they were actively participating in this all-out war. And, of course, there was the ubiquitous symbol of the frying pan pouring grease into the breach of the field artillery piece in all the ads. Of incidental importance was the use of instruction: telling the housewife how to go about collecting her waste fats and greases, and explaining the reasons why it is necessary for her at this time to religiously save the cooking residue that she would normally throw out.

With September here and the planned advertising and publicity campaign drawing to a close, the question of results naturally arises.

In attempting to appraise it in terms of results there are certain specific difficulties that immediately come up. In the first place, this whole effort, insofar as direct results are concerned, differs from a similar campaign that might be conducted on behalf of a new or established breakfast food. In direct contrast, the waste fat salvage collection, even stimulated by an intensive and well coordinated advertising program, will start off slowly and grow as it goes along. It will develop a latent peak rather than a more immediate one as in the case of a food product. The reason for the difference in the two is fairly obvious. The salvage idea is new and different. It has no tried and tested distribution, or in this case, collection, system set-up and properly integrated. The breakfast food product has all that and sales can be obtained without waiting.

What the fat salvage collection results, at this stage, do more closely approximate are early election returns. That is, they show trends, which may or may not develop sufficiently to become the total result. And, therefore, they should be interpreted only in terms of their limited meaning, since they are liable to change without notice. The figures that may be used here are unofficial and precede those that will be issued at a later date by the War Production Board. In Chicago, for example, the first week's results, back in January, were 300 pounds, but in the week ending June 20, the total had shot up to 125,000 pounds. So, at first sight, the critics would have written the plan off as a failure. Nor is the Chicago figure an isolated example. The cumulative trend has been noted in other cities as well. Springfield, Mass., in the first month had a total of some 10,000 pounds. The first three weeks brought in 4,500 pounds and the remaining 5,500 pounds came in in the fourth week. Skipping across the continent to Los Angeles the same trend is found operative there: the week of July 27 raised some 40,000 pounds and the following week of August 3, saw 61,000 pounds collected.

When official figures covering the entire country are revealed, being

first figures they should not be discouraging for the reasons outlined above. There are several other important factors bearing on them that warrant consideration in appraising the results. (1) Summer is a bad time of the year as far as fat salvaging goes. In the first place, more people eat away from home in the warm weather. Secondly, people do not consume as much meat or fatty foods in the summer as they do in the cooler months. Third, fats and greases are more likely to become rancid in warm weather, thus cutting down on salvage.

At the present time, there is a meat shortage. That it has had a retarding effect on the collection of waste fats cannot be doubted. It was quoted almost universally by all renderers contacted as a reason for the slow start of the campaign. But, early returns are not important since the salvage campaign is cumulative in effect as was indicated by the figures collected from various cities. Habit plays an important role in the life of the nation as well as in its people. American people living in a land of pre-war plenty have had their thinking conditioned by the seeming abundance of everything. That we are not a people of thrift, saving and frugal ways is natural. Therefore, it will take time before any close approach to a thrifty and frugal way of living can be made. Until it does neither a fat nor any other national salvage plan can become completely effective. People have been in the habit of throwing away their household fats and greases. As they come to realize the importance of these "waste" products in the war effort, they will break this habit and collect in earnest.

That it takes from two to three weeks for the average householder to accumulate a pound of grease may be almost overlooked. It cuts down first period collection figures. Upon seeing the quality of her waste fats and greases after straining them, Mrs. American Housewife may not be too quick to turn them in. This may hinder the drive to a certain extent. The accumulation of the waste fats, however, will grow to the point where the housewife will have to get rid

of them or risk cluttering her already overcrowded refrigerator. In general, she will follow the former course, particularly in the later stages of the collection campaign.

Renderers in the metropolitan New York area report that large segments of the population, especially Jewish, Italian and other foreign type populations use a great deal of greases and fats in their cooking. While this may be purely a local problem, it must be realized that in other sections of the country the make-up of the population is also complex, and this problem takes on a nation-wide aspect.

On the credit side of the collection ledger are equally important and favorable factors that should be considered in tabulating results, especially on the long range basis. The campaign wherever figures were available shows a steady and healthy growth. Chicago will bear that out, and there is no reason to believe that it is an isolated example. Other cities reveal the same tendency. This was a universally stressed point by renderers, etc. The renderers are optimistic as to the outcome of the campaign. While they were unwilling to release the figures for publication until after they had been made public by the W.P.B., there was an undercurrent of optimism in their talk. Where other salvage or scrap drives fell down, the fats salvage campaign is strongest. It has a collection system already set up for it in that renderers regularly call on meat markets for scrap anyway. The problem is getting it from the householder to the meat dealer. And this problem is being solved daily wherever it becomes serious. No such collection system was maintained in any way, shape or form in normal business routine for collecting rubber, metals, etc. This probably in part accounts for other salvage failures. One of the leading chain store groups, that has cooperated fully in promoting waste fat salvage, reported that the drive was running smoothly and that it was well-publicized. This and other encouraging reports must be taken into consideration when attempting to appraise the success of such a drive.

SANITARY PRODUCTS

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Want higher kill at lower cost in your Household Spray? Then use Velsicol AR-50. Tests prove it *more effective* against flies and bedbugs. Effective also against roaches, mosquitoes, confused flour beetles, ants and termites. Powerful repellent. Non-poisonous to warm blooded animals.

Velsicol AR-60 possesses *unequalled* repelling power, quick knock down, high kill. Leading manufacturers of Cattle Sprays switched to AR-60 after field tests, and repeat orders are convincing proof of merit. Its use in Agricultural Dusts is also showing great promise.

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INSIDE NEWS

SEPTEMBER

PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y.

1942

A Challenge to American Industry

Success of National Salvage Campaign May Mean Difference Between Victory and Defeat

Most important extra-curricular activity of American industry these days is the nationwide salvaging of scrap iron and steel, rubber, copper, tin, lead, zinc, manila rope and burlap. All out war production has created terrific demands for supplies of these materials.

Particularly critical is the need for scrap iron and steel. Steel mills' inventories of scrap iron and steel have shrunk more than 45 percent over the past 18 months of record-breaking steel production, and now represent an average for the entire steel industry of little more than two weeks' supply at the present rate of consumption. Unless it is possible to get some 6,000,000 tons of scrap iron and steel from other than normal sources, the expanding capacity of the steel industry cannot be fully utilized.

And we need steel for almost every item of modern, mechanized warfare.

Donald M. Nelson and the War Production Board have appealed to American industry to get in the scrap. The WPB has set up Industrial Salvage Committees in some 400 leading cities and is making an industry by industry and plant by plant canvass to get in the scrap. *This involves appointment in each plant of a salvage executive, someone with authority to make a general housecleaning, junking obsolete and worn out equipment.*

Cooperating in the national scrap salvage drive is American Industries Salvage Committee, representing groups of leading industrial

concerns. Through a nationwide advertising and publicity campaign, paid for by the Committee, industry and the general public are being made aware of the urgent need for scrap materials.

Included in the industrial salvage which is being sought are old dies, machine tools, boilers, abandoned rail sidings, elevators, old castings, flywheels and other obsolete and unused machinery. Any metal materials, any of the list of critical materials should be salvaged and salvaged quickly.

The need is vital and immediate. Steel freighters whose keels were actually laid after the attack on Pearl Harbor (and whose plates are made of roughly 50% steel scrap) were completed within three months and carried the bombs across the Pacific that helped to win the Coral Sea Battle in May 1942.

Scrap—and particularly industrial scrap—is everywhere. A major portion of the scrap collected necessarily must come from industrial plants. The success or failure of this vital campaign will depend ultimately upon the vigorous cooperation of American industry, from the greatest industrial plant to the smallest shop.

Go to it. This is your fight—and your opportunity to show the Axis what American "can do" really means. Dig in. We've got a war on our hands—and we've got to win!

(194)

Here's What You Can Do—ACT NOW!

Organize Your Plant

Put someone in charge of salvage in all departments of your business and GIVE HIM AUTHORITY TO ACT. Organize and direct the necessary staff for carrying out the program.

Comb the plant and yards for dormant scrap, unused and abandoned equipment, old boilers, boiler flues, pipe, foundry moulds, obsolete dies and parts, material now being destroyed or burned but which has salvage value, and see that it is disposed of as scrap.

Survey all plant equipment, particularly idle, stand-by or discarded machines, with a view to applying or converting it to useful production.

Speed the return of scrap to mills and refineries through existing channels. Report promptly any equipment which is definitely obsolete, and see that it is disposed of as scrap.

Segregate Your Scrap

Classify scrap and provide separate containers for each class of scrap material.



PRIME SCRAP—Here a heavy drum from an old mine hoist is being cut down to "pan size" for firing in an open hearth furnace. After being fired with equal amounts of pig iron, the long-unused drum will emerge as steel plates for 1942's Liberty Ships.

Dismantle discarded equipment promptly into its component parts. Sort blanks, short ends, cut-downs, clippings, etc.

Separate paper scrap—white and colored, news and book or catalog stock—before sending it to the baler, for greater salvage values.

Sell Your Employees

Devise awards and incentive systems to recognize effective work in the conservation and salvage program.

Work through foremen to reach every machine operator in preventing spoilage and minimizing waste at the source.

Constant reminders in the form of posters, pay envelope enclosures, house organ publicity, etc., are potent aids to the conservation program.

Remember: *Your plant, your operations, the jobs of your employees depend in large measure upon steel production. If U. S. furnaces are to keep going full blast, they must have scrap—by the millions of tons!*

Get in touch with your nearest Regional Headquarters—or The Industrial Salvage Section, Conservation Division, War Production Board, Washington, D. C.

(195)

(Advertisement)

BY NATIONAL CAN



SEPTEMBER

PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y.

1942

Lacquers Manufactured From Corn

Many bushels of corn are used annually in the manufacture of lacquer using solvents made from corn. Nearly two bushels of corn are consumed in making the lacquer for a single automobile. Corn in the form of acetone is also used in airplane dopes, paint and varnish removers and synthetic resins. In the form of butanol, corn is used in spirit varnishes and polishes as well as lacquers. Ethyl alcohol from corn is used in lacquers, shellac solutions and polishes. (198)

Wisconsin Will Supply Army With Canned Smelt

Wisconsin, long the canning grounds for fish and other foods, will pack 1,000,000 lbs. of smelt this season for the sole use of the armed forces, employing a new method.

The government has selected a trial factory for canning smelt under its supervision. The new technique, according to an authority of the U. S. Fish and Wild Life Service, is similar to that used in canning sardines. This food expert described the method by saying it consisted of placing the smelt in brine, steaming them and drying and cooling before hand picking. Three tablespoons of corn oil are added before the cans are sealed and then placed in a cooker. He also gave canners information on 2 methods of packing smelt, approved by the federal government, the second varying from the first process only in the brining time. (199)

Nazis Produce Fibers From Casein

Casein-derived fibers are being produced in Germany by a new improved process, it is reported. Rennet casein is the basic material. It is first treated with an alkali and then subjected to a fermentation process. Subsequently, fiber formation is accomplished by spinning the casein solution into a bath of sulphuric acid and sodium sulphate. The threads then pass through sodium chloride and aluminum sulphate baths, and are finally made insoluble by treatment with cold and warm solutions of formaldehyde respectively. (200)

"RESEARCH IS ORGANIZED THINKING"

*National Can Corporation's
Modern Laboratories
Wage a Continual War
Against Food Spoilage*



A View In The Bacteriological Laboratory

This Laboratory is part of the Research Field Service Division. It is here that spoiled cans of foods are examined to determine causes of spoilage. In the background is a dust-proof room for bacteriological plating work. This Laboratory also conducts research in bacteriological problems involved in the packing of new products. (196)

Food Purchases of U.S. Navy Stagger the Imagination

Buying food for Uncle Sam's Navy was a big enough job in peacetime to make the Bureau of Supplies and Accounts one of the largest purchasers of foodstuffs in the world. But since the two-ocean Navy program got under way the food demands of the sea service have multiplied far beyond any previous levels. Now the Navy is second only to the Army as a customer of U. S. food processors.

For the year ending July 1, for example, the Navy's estimates called for the purchase of some 910,000,000 lb. of food, 12,168,000 dozen eggs and 1,419,600 gallons of sauces, oils and vinegars. Even these estimates fell short of actual purchases.

Among the food purchases for the fleet and the bluejackets ashore in the last 12 months were 43,439,000 lb. of canned vegetables and 18,525,000 lb. of canned fruits. (197)

Technical Topics

NICKEL PLATING of magnesium alloys is accomplished by electrolytic methods by a new process developed by an American chemical manufacturer. The nickel deposits obtained are declared to be soft, adherent, and easily buffed to a high polish. (201)

ZINC TETROXY CHROMATE is the name given to a new pigment said to offer promise in rust-inhibiting primers. It is stated to be less water soluble than regular zinc yellow and therefore produces more water-resistant coating. (202)

WOOL FATS, yielding harder and tougher paints when mixed with beeswax, carnauba, high melting paraffins or resins, make a tenacious, durable protective film which can be applied in very thin coats. English aircraft manufacturers are experimenting with such a lanolin-resin solution. (203)

RESINS—Three new and interesting resins have been found in England. They are Hal resin, Jak tree resin and a gum from Acacia Zacta. A varnish made with Hal resin and turpentine was applied to sized wood on which it dried in about 48 hours to a fairly tough glossy finish. Jak tree resin is practically 100 percent soluble in acetone and the Acacia Zacta appears to be a good substitute for standard gum acacia. (204)

COPPER MERCURIC IODIDE is the basis of a temperature-indicating paint recently described in a British technical journal. The salt is produced by triturating cuprous iodide with mercuric iodide with sufficient water to form a paste, drying, and then grinding, it is declared. (205)

SODIUM DINITRO-ORTHO-CRESOL has been shown to eliminate the possibilities of plant infection by killing the fungi in fallen leaves in recent investigations of the Bureau of Plant Industry of the United States Department of Agriculture. It has also been found to be successful for killing fungus galls on cedar trees. (206)

Every effort will be made to furnish additional information on these articles. Where such information is not obtainable, we will refer inquirers to the original source of the article. Write to National Can Corp., 110 E. 42nd Street, New York City. Please mention the number at end of article—also name of the magazine you saw it in.

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with great knockdown power. Mechan-
ized equipment has replaced the slower meth-
ods of transportation, and the Garand rifle has
supplanted the Springfield because of its higher "kill-
ing power." Similarly, in household sprays PYRIN has so
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this higher "killing power." • In view of the demand for
Pyrethrum by the armed forces and agriculture, the
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2½ times is of extreme importance. One
pound of duPont's IN930 (used in
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25 lbs. of Pyrethrum
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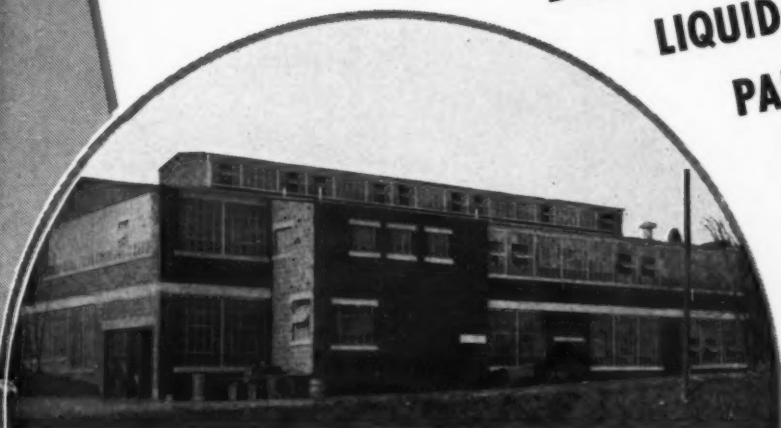
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THE ABOVE ILLUSTRATION
APPEARED IN AN ARTICLE
"PYRETHRUM

VS. ROACHES"

BY DR. F. L. CAMPBELL

IN SOAP MAGAZINE, MAY
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● Kenya Pyrethrum has come to stay as the great, natural, safe, vegetable insecticide. Long known as a most effective control for certain household, garden and green crop pests, new research is giving a much better understanding of its efficiency and advantages.

● War-born necessity has resulted in new scientific investigations of the characteristics and usefulness of Kenya Pyrethrum—investigations much wider in scope than any heretofore attempted. The continuing flow of new information thus obtained opens new vistas for the application of Kenya Pyrethrum. Its effectiveness in insect control because of high pyrethrin content, its safety and availability indicate its superiority as a natural insecticide base.

KEN YA PYE will help win the war against insect
pests in the household, the garden, and on the farm.



Why did the best castles have round corners? (PACKAGING RIDDLE)

THERE was one big trouble with castles. The first ones were often square-cornered. They were supposed to protect what was inside. But they didn't. They couldn't.

No matter how many loopholes they had, there were always "blind" corners to block vision. Hostile troops could creep up unseen. Further, the stones at the corner were exposed on two sides. And that made them more vulnerable to battering rams.

Square-cornered castles just weren't safe enough! The package *had* to be improved.

New castles were built with round corners. In these circular walls, the loopholes let you see out at *every* angle. And in addition, the curved surface presented a greater obstacle to battering rams.

History books don't refer to the castle builders as "packaging experts." But they actually were. They improved their package to fit their needs.

Producing the right packages to fill America's needs today is the most important job Continental ever tackled. What these packages are, their size, or appearance is unimportant now. The significant thing is that government, like industry, has found that the tin container is an all-around, safe, economical package.

Looking into the future we see many new packages—ideas which must be held until another day. But, for those who are planning ahead, we offer the services of our packaging engineers, research men and designers. They will be glad to work with you.

CONTINENTAL CAN COMPANY

Packaging Headquarters for Industry



What will be the PACKAGE of the FUTURE?

The package of the future will be the package that best meets *all* these 10 important points:

1. Protects against light, heat, and dirt.
2. Does not chip, break, or tear.
3. Is adaptable to *highest* speed filling operations.
4. Is economical to pack, ship, and handle.
5. Light weight, compact, no waste space.
6. Moisture and vapor proof, impervious to temperature changes.
7. Easy and convenient to display, sell.
8. Available in wide variety of sizes, shapes, styles (over 500).
9. Offers maximum convenience and safety in consumer usage.
10. Permits high processing temperatures, certain hermetic sealing.

These points made the metal container *first* in packaging. If there ever is another package that has *all* these qualifications, we'll be making it!

...Official Test Insecticide

STOCKS of the 1942 Official Test Insecticide are available for immediate shipment from the office of this Association. The 1942 O.T.I. is required for all current testing and grading of fly sprays by the official Peet-Grady Method. The 1942 O.T.I. will remain official until June 1, 1943.

Directions for use of the O.T.I. and the technique of the Peet-Grady Method are given in a booklet, a copy of which is included in each carton of O.T.I.

The O.T.I. is available at \$5.00 per dozen bottles, plus shipping costs, to members of this Association. To non-members, there is an additional service charge of \$1.00 per dozen bottles. Single bottles are \$1.00 each. Check with order is required.



National Association of Insecticide & Disinfectant Manufacturers, Inc.

110 East 42nd Street

New York

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power to spare

For centuries Niagara Falls has inspired man with its ageless beauty and ceaseless power. Generation after generation has found it symbolic of the steadfast, dynamic way of life under which America has grown to its present stature. It is symbolic, too, that while power from Niagara has been harnessed to the will of man...to the production of mills and factories, to the creation of light and heat and energy...it still has a limitless volume of power to

spare. Only a little of this great power has been used...as not all of the great potential power of America itself has been used.

America is a greater land of promise today than when the first pioneer saw a dream of the future in the mists of Niagara. New ways, new methods, new conceptions of how man may progress and expand under the doctrine of freedom can be seen today. The world will follow the steadfast, dynamic way of America to

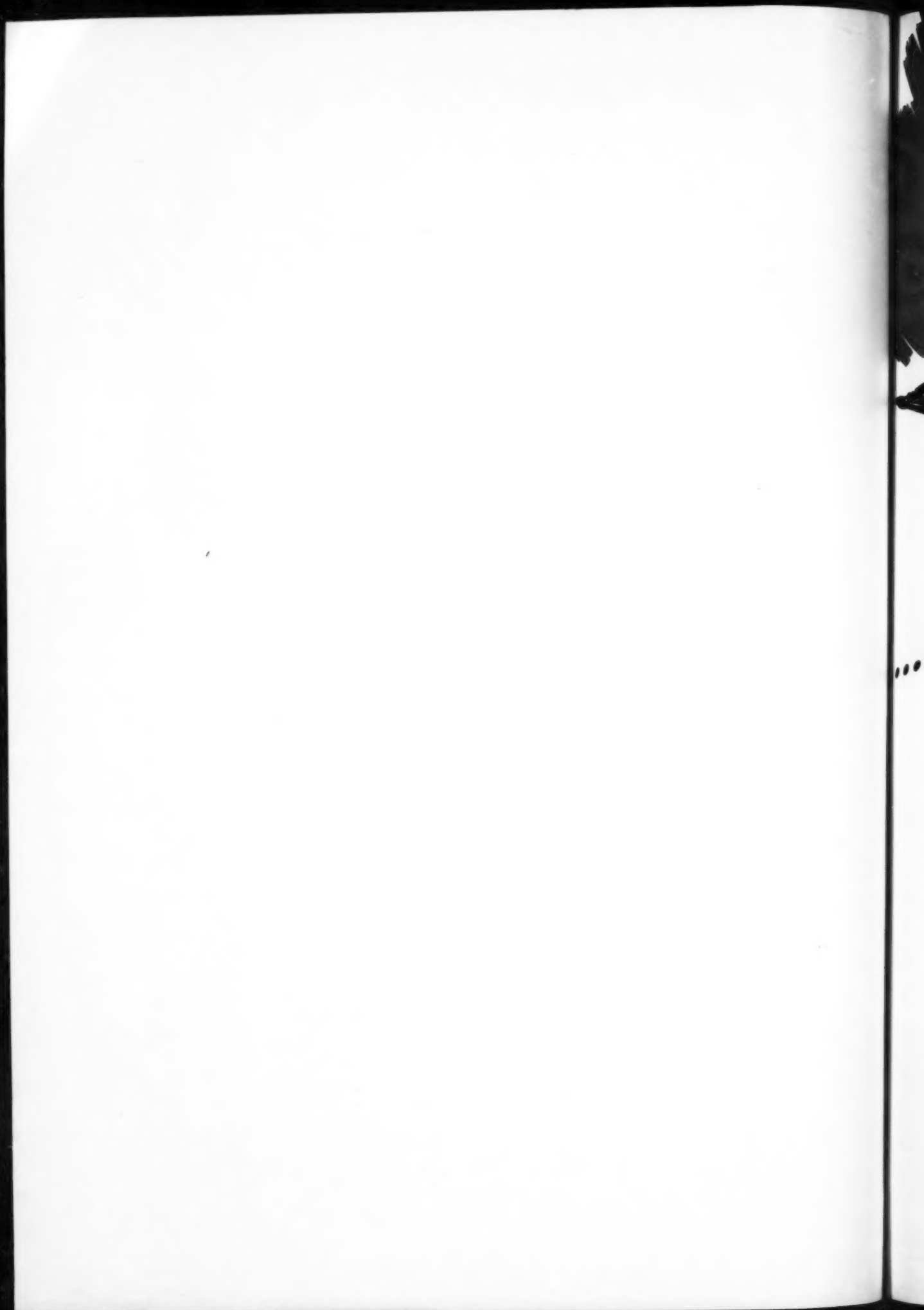
a new era. For the power of free men is as boundless as the power of Niagara — and as resistless as the flow of the river over its sharp cliffs.

We who work within sight and sound of Niagara Falls are devoting every ounce of our energies and facilities to speeding the flow of chemicals for Victory.

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To be properly perfumed, an insecticide should be put into the hands of a competent perfumer, experienced in this special field. Insecticides must be carefully treated so that the proper balance between base odor and perfume be achieved. There is a right way to perfume an insecticide which leaves no obnoxious base odor and no perfumy pall.

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Want to see your packaging problems vanish? Pack in Anchor Hocking glass. It's worth looking into for three big reasons. One, it's sound business. Two, glass is plentiful. Three, it helps the government conserve large quantities of steel, tin, tinplate and rubber.

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men know packaging from every angle. They are particularly important to new users of glass who seek thoughtful aid and counsel. They can help greatly in simplifying and expediting the change-over to glass.

Remember—Anchor Hocking makes containers and closures. And because they're made for each other, are available from a single source of supply, it will pay you to get both in the Anchor Hocking complete package. Of course, if you wish them separately, your friendly Anchor Hocking packaging engineer will be happy to serve you.

Worth looking into! *Anchor Hocking Containers and Closures*



Anchor Hocking Narrow Mouth Rounds are outstanding containers for insecticides, rubbing alcohol, liquid polishes and waxes, and a wide variety of household chemicals. 18 sizes are available, ranging from ½ oz. to 128 ozs. Pint and quart sizes are illustrated. These containers are easy to dispense from, make it possible to see quantity at all times. Available in amber or crystal.



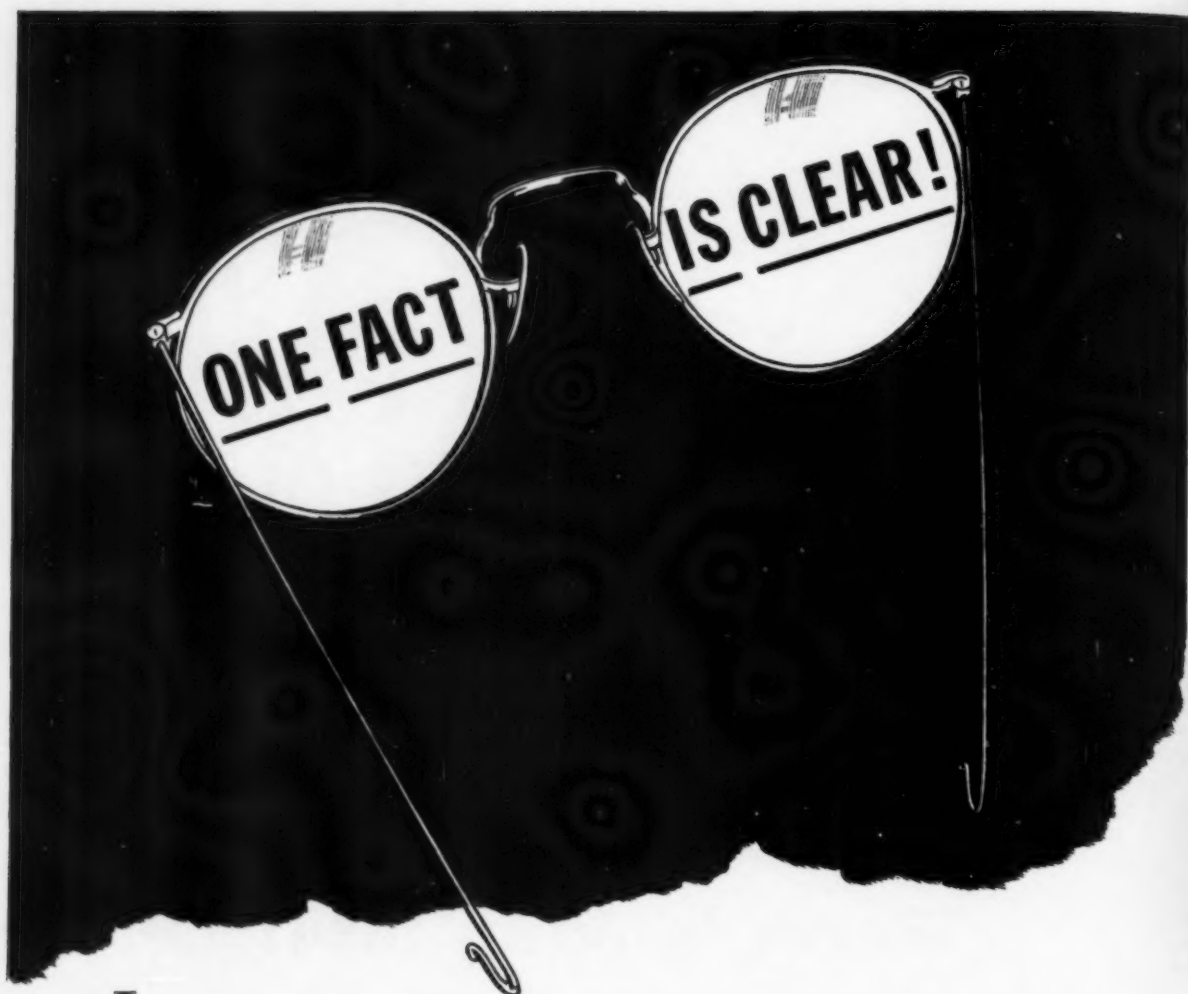
The Anchor Improved C.T. Cap... Pitch of cap thread and glass container thread matches throughout their entire length, gives better, tighter seal. Absence of interference between cap and container threads makes cap easier to spin off or on. Fine knurls, cylindrical side walls and neatly turned wire edge provide better appearance.

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IN all the uncertainties surrounding the Pyrethrum situation, one fact still remains clear — that D & O Pyrethrum Extracts have established and still maintain top ranking for quality and performance.

To a great extent our ability to supply our customers' needs depends on factors not only beyond our control but still too indefinite for accurate estimate. When more information is at hand regarding Army requirements and probable supplies it will be possible to predict with some fair degree of accuracy.

In the meantime we can only assure Pyrethrum users that they will be served to the best of our ability and that ever-present difficulties have not threatened the maintenance of our quality standards.

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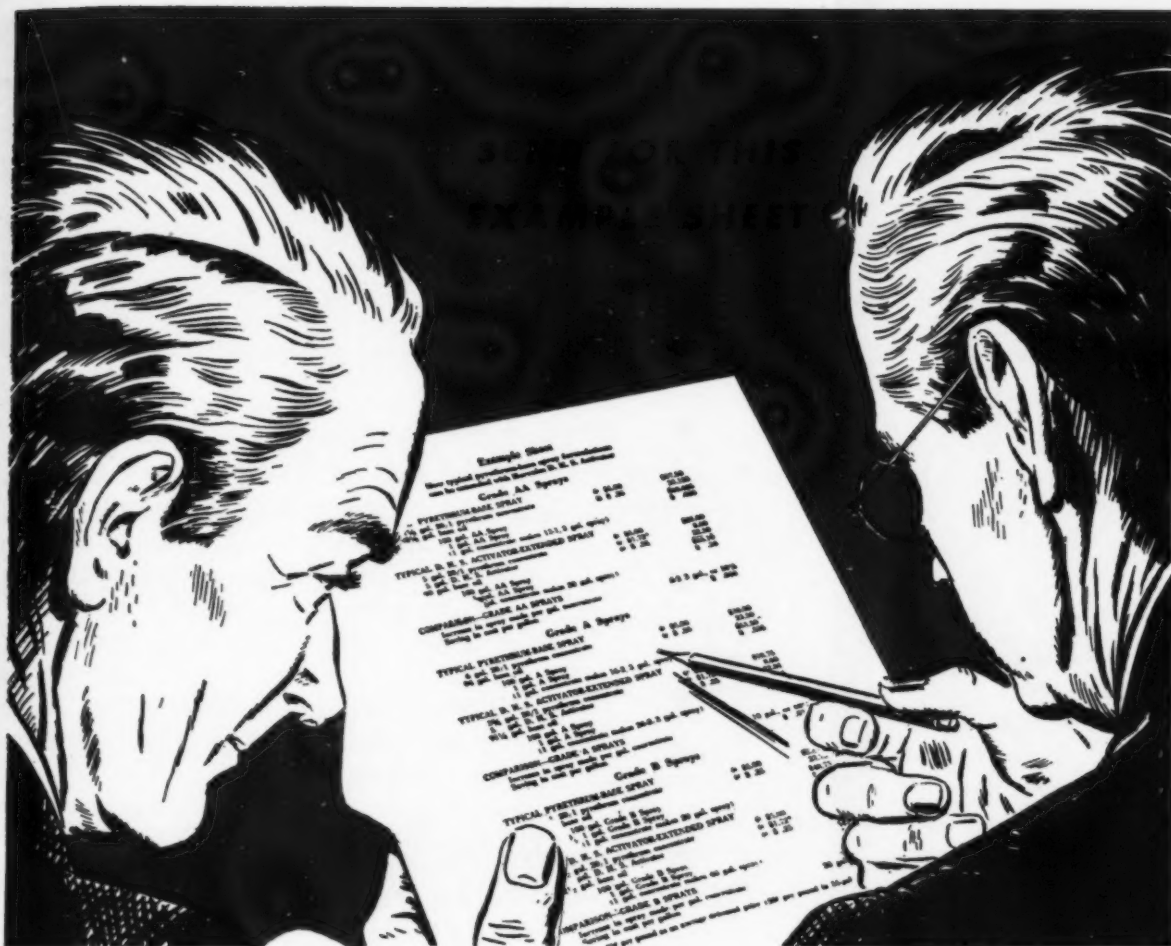
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HOW TO MAKE MORE SPRAY WITH YOUR PRESENT STOCKS OF PYRETHRUM



You can almost double your gallonage of pyrethrum-base fly sprays with the pyrethrum concentrates, or finished sprays, you have on hand.

You can do this and still maintain knock-down, kill, and grade rating, simply by extending your formulations with Hercules D. H. S. Activator*.

We have printed an Example Sheet which shows how pyrethrum-base sprays can be stretched. Using typical formulas as examples, it shows the increase in gallonage and your saving per gallon, with D. H. S. Activator.

You may not get any more pyrethrum for some time. Write for your copy of this Example Sheet today. Or, tell us how much pyrethrum concentrate you use in each

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*Reg. U. S. Pat. Off.



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September, 1942

Say you saw it in SOAP!

85

How can you tell

- Whether or not the Disinfectant you purchase has a definite killing power—by looking at it? You can't see the germs destroyed with your naked eye.
- Whether the Disinfectant you purchase has a high or low Phenol Coefficient—by the color? No, the color has nothing to do with the germicidal power.
- By the odor? No, the odor of a Disinfectant gives no indication of its killing power.
- Whether the Disinfectant meets the U. S. Bureau of Standards' Specifications? Only a laboratory analysis will give this information.
- Whether the product conforms to the latest Food and Drug Regulations? Again, only a laboratory analysis can certify to this effect.

THERE IS ONLY ONE WAY IN WHICH YOU CAN BE POSITIVE OF THE QUALITY OF THE DISINFECTANT WHICH YOU PURCHASE AND THAT IS TO BUY FROM A HOUSE OF UNQUESTIONABLE RELIABILITY. FOR OVER A QUARTER OF A CENTURY AS MANUFACTURERS OF THE WORLD'S FINEST DISINFECTANTS, WE UNHESITATINGLY GUARANTEE ALL OF OUR PRODUCTS.



Baird & McGuire, Inc.

Holbrook, Mass.

St. Louis, Mo.

SANITARY PRODUCTS

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

THAT the complete elimination of metal cans impends for the packaging of insecticides in the smaller sizes, that is from one gallon down, is quite evident, judging from Washington reports. This is no surprise to the insecticide industry which has seen such a restriction coming for the past six months. In place of cans, only standard round bottles, pints and quarts, will be available. Although this restrictive order from the W.P.B. has not as yet been issued, we can assure the insecticide industry that it is coming shortly and that packaging plans for the 1943 season should be made accordingly.



ENFORCED switching away from metal containers for the packaging of insecticides and disinfectants. — whether it be pints, gallons or larger sizes,—will entail increased expense for containers. The use of bottles in place of small cans, of carboys or glass jugs in place of gallon cans and steel pails, and possibly of wood or some other substitute in place of steel drums will mean higher costs for the manufacturer. The O.P.A. is cognizant of this fact, not only in the case of insecticides, but in many other products as well, as has been brought out in Washington meetings and in a meeting of insecticide and disinfectant manufacturers with representatives of the O.P.A. in New York on September 5. We feel that some advance in insecticide prices to cover higher container costs may be allowed by the O.P.A. during the next month and that

manufacturers should delay their 1943 selling plans if possible until such decision has been made by the O.P.A.



ON every hand, we hear talk of substitute containers to save steel,—glass for tin cans and for light steel, and wood for steel drums. With one or two exceptions, the substitute containers may work out reasonably well, but in the case of concentrated pyrethrum extracts and other insecticide concentrates, wood barrels will not do. Experiments over the past five years prove that they will not hold a light petroleum base liquid without leaking. When it comes to leakage of high priced concentrates, involving critically short materials, we feel that any such ban on steel drums would indeed be short-sighted economy.



IN view of the present difficulty in obtaining pyrethrum products for the manufacture of finished insect sprays, roach powders, and the like, many manufacturers are turning to other basic materials. That this entails a change of formula is obvious and it should also be obvious that label changes are required. Where labels or formulas are registered, a new label statement should be filed immediately. Failure to do this may mean that manufacturers will find themselves in conflict with state laws or the Insecticide Act of 1910 or both.

Table I.
HOUSEHOLD LIQUID INSECTICIDE QUESTIONNAIRE

- A. Reasons for use. Do you use a household insect spray? Because
 1. You are annoyed by insects buzzing....biting....dirtiness.....
 2. You wish to avoid a health hazard....disease germs.....
 3. Insects contribute to property damage....dirty walls, woodwork, carpets, clothes.....
 4. You wish to avoid insects on your pets.....
- B. Experience in use. Do you use your spray?
 1. For flies....cockroaches....bedbugs....carpet beetles....fleas.....ants..... Clothes moths....on clothes before storing....mosquitoes..... In the basement for centipedes and spiders.....
 2. For mosquitoes when on an outing as picnicking....golfing....fishing....., etc.
 3. For the flies that bite when at the beach.....
 4. For flies and bugs at your picnic table.....
 5. For insects that attack your flower or vegetable garden.....
- C. Manner of use.
 1. Do you spray directly at flies to get them down.....
 2. Do you fill the room full of spray with doors and windows closed and wait a few minutes to sweep up fallen flies.....
 3. Do you spray your clothes and the immediate area of a picnic to avoid mosquitoes.... The immediate area of a beach to avoid biting flies..... Your picnic table and the area underneath.....
 4. Do you spray directly on pets for their fleas.....
 5. Have you ever used spray for nits or lice in the hair of adults or children.....
 6. Do you take a bed all apart and thoroughly saturate springs, etc., when spraying for bedbugs.....
 7. Do you spray into all cracks and crevices for roaches and repeat treatment until signs of them diminish..... Do you use powder for roaches..... Both spray and powder.....
 8. What sort of a sprayer do you use—one that squirts with each push of the sprayer pump....; One that emits a continuous fog-stream of spray as you pump.....
 9. Do you keep your sprayer put away..... Handy.....
 10. Does the spray you use have a pleasant odor or perfume..... Do you prefer perfume.... or odorless....spray.
- D. Performance.
 1. Do you expect your spray to knock down and kill flies when you spray directly at them...; or when you fill a room with spray mist.....
 2. Have you ever noticed any difference in knockdown of flies from different sprays you might have used.....
 3. Have you ever noticed any insects recover later which apparently were knocked down and killed by the spray.....
 4. Is your spray container easy....or hard.... to open. Is it easy....or hard....to pour from without spilling.
 5. Do you consider it easy to hit insects with the sprayer you use....or difficult.....
- E. Experience from use.
 1. Are you satisfied with the all around performance of your spray....
 2. Have you ever stained walls or woodwork with spray....
 3. Have you ever contaminated food with spray....
 4. Have you ever noticed any irritating effects from spraying, such as throat irritation, tickling of your nose.....
 5. If small children or a baby was present in the room, have they ever showed signs of irritation.....
 6. Have you ever noticed any deterioration of spray....
 7. Have you ever experienced any other damage from spraying, damage to plants in the house....goldfish....pets....
 8. Do you consider spraying a fire hazard.....
- F. Conception of spray.
 1. Have you any idea of what's in spray that kills insects.....
 2. Do you think the odor has anything to do with it....
 3. Do you have to hit the insect with the spray to kill it....; or might it breathe vapors....
 4. Do you consider spray a luxury....or a necessity item....
- G. Preference for a particular brand.
 1. Do you prefer a particular brand of spray...
 2. Have you used two or more different brands....
 3. Have you noticed advertising of spray over the radio...., in the magazines you read...., your local newspaper...., displays in the local store....
 4. Do you buy your spray in a grocery store...., a hardware store...., a drug store...., a general store...., other....
 5. Has your local merchant ever influenced your choice of a spray....
 6. Does your husband have any interest or opinion concerning your spray or its use....
 7. What price do you pay for a pint....or quart....of spray....
 8. What price do you pay for a sprayer....
- H. General experience.
 1. Can you recognize a housefly....a biting fly....a bedbug....a cockroach....a clothes moth.... a carpet beetle....a mosquito....
 2. Body or headlice....
 3. Fleas....
 4. Have you used repellent lotion for mosquitoes and biting flies.... Did these work....
 5. Have you used powder or emulsion sprays for house or garden plants....
 6. Can you recall off-hand the names of different brands of insecticide that you have used....

What the Housewife thinks about

INSECT SPRAYS

UNIV OF IDAHO
By Christopher A. Murray

DURING late summer and fall of last season, the writer attempted an investigation into the question, "What does the average American housewife think about liquid insecticides?" This proved to be a difficult task, for two reasons. The first, which was anticipated in advance as being a perfectly natural thing to expect, was the difficulty of finding the housewife "in" and free or willing to devote some of her time to answering questions prepared for the survey. The second difficulty, frankly, had not been anticipated. This was the discovery, that of the housewives contacted and who were willing to cooperate with the interviewer, about only one in five *had ever used* liquid insecticide at all. It was further found that among some of those who used spray, knowledge of its possibilities was distinctly limited, and amounts used correspondingly small. Nonetheless, by piecing together the various aspects of their experience, a complete picture can be had of what would represent the most ideal use of spray by the housewife. It is this picture that the present article attempts to present.

The detailed questions used as a basis for each interview are given in Table I. The interviews were made by the writer personally, and by two helpers in other localities. The use of liquid insecticides was sampled in a small country town, two large cities, and one suburban village, all in the mid-west. About 200 housewives were reached in the course of the investigation, including the number approached who used no spray. It should be com-

mented that an effort was made to reach housewives in both well-to-do and medium income neighborhoods. The comments and notations, based upon responses and discussions with those who had used insecticide for various purposes, are comparatively few. Because they were obtained in such varying localities, seemed fairly uniform in response, and against the background of non-users discovered, it is felt they may be thought provoking to those engaged in the manufacture and sale of these products.

Reasons for Use

MOST of the housewives who use spray use it for flies, and it is interesting to observe that this use of spray is far more prevalent in families where there are small children than in families which consist only of adults. In homes where only adults are present, the houses are usually well screened, and the fly problem is insignificant enough to be easily handled by the old fashioned fly swatter. Women in this group may use spray for clothes moths, mosquitoes or, occasionally, cock-

roaches. In homes which have small children, however, the fly problem is apt to be acute, because of their tendency to rush in and out of doors, and carelessness about opening and closing screens. Furthermore, the modern mother is apt to be conscious of any health hazard to her children and assiduous in taking prompt steps to correct it. Some of the women interviewed had used a liquid insecticide for the first time to combat some specific infestation other than flies, and had then later discovered how efficient and convenient insect spray is for getting rid of the housefly nuisance, and had developed a regular habit of spraying for flies.

The housewife's conception of property damage by insects consists mainly in possible damage by clothes moths. There is full scale use of spray in this respect by housewife users of spray. Other aspects of insect damage and the filth angle do not seem to impress the housewife as much. She just has a distaste for any winged or crawling invaders of her home and acts accordingly.

A survey shows only one housewife in five uses any insecticide spray at all.... an investigation of why used, how used, and performance experiences in the home The first in a series of two such articles

Some women were found who use spray on their pets. The usual practice was to rub the spray into the hair rather than spray directly at the animal. Of those with pets, several were well aware of the excellent advantages of powder for fleas and lice. In one instance, 130 fleas or so were taken from a six-weeks-old puppy after an application of insecticide. Perhaps a little publicity on "flea counts" on pets might stimulate more consumer use for this purpose. The ordinary sized dog must harbor hundreds with even a mild case.

Experience in Use

AS noted above, practically all women use their spray for flies. This is an obvious result both of need for such use and the prevalent notion that liquid insecticides are mainly "fly sprays." The use for cockroaches is not as limited as might be supposed. In fact, in these medium to well-to-do income groups, housewives quite frequently do experience infestations of these insects. Of the women questioned that had had this experience, some had called in a professional exterminator. Perhaps this was not entirely necessary, but these housewives did not feel the need of taking any chances. In neighborhoods where there is greater exposure to roaches, generally the apartments are serviced regularly by a professional operator. Here, the housewife found a serviceable sprayer ready for use a desirable supplement to this outside aid.

Most women are on the alert for the menace of clothes moths. Nothing is more disconcerting to the housewife than to find an infestation of clothes moths present in the wardrobes of her family. She is ready to go to any ends either to avoid or destroy them. There seems to be some confusion in her mind as to the difference between a *moth-proofing* product and a *moth-killing liquid* insecticide. Be that as it may, proper use of both should provide ample protection. It is apparent that some regular users of spray for flies and mosquitoes originally purchased the insecticide for clothes moths.

The ant problem has also created

a number of users. Most of the women who had tried ant powders prefer these over the spray-type insecticide. Practically no women bother about spraying for the spiders, centipedes, etc. that may inhabit the basement or attic. The housewife appears to shrink from having anything to do with these creepy creatures which do not often violate her main living quarters.

Spray is frequently used for mosquitoes, particularly in homes where there is a sleeping porch. The annoyance of mosquito bites and itching are one of the housewife's main sources of insect irritation. Many women have become accustomed to think of spray for their summer cottage and vacation trip, with mosquitoes as well as flies mainly in mind.

It is to be regretted that more widespread publicity by manufacturers of spray has not been given to liquid insecticides for use when on outings such as picnics, fishing, hiking, or when at the beach. In a vicinity where this has been done emphatically, spray use for these occasions has found approval. Spray applied to the picnic table and its immediate area before the lunch basket is served can well afford some protection from flies and gnats. The immediate area of the beach, blankets, and clothing may be sprayed, and afford respite from biting flies present. When golfing or fishing, spray applied to the clothes now and then will afford relief from mosquitoes and gnats that sometimes cloud about one's head. This type of use is especially indicated when on vacation during the summer months and where conditions tend to increase the insect problem.

Not many housewives with gardens were found who attempt to use liquid-type spray for their flowers or vegetable gardens, and it is rather the present tendency to use the water-emulsion or dust insecticides manufactured especially for outdoor use. This may be largely due to lack of information furnished by most manufacturers of oil base spray for fear of plant damage. But, it has been proved that with the oil base used in some sprays, the household liquids may serve equally well for most of the insects attacking

plants, flowers, and vegetables grown outside the home.

In the present war emergency, with many concerns furnishing low cost or free seed for vegetable gardens to stimulate growing of home vegetables, it might be opportune for manufacturers of household sprays to adapt their formulae so that their spray can be used for the protection of these gardens. It can hardly be doubted that such efforts will be repaid in increased dividends created by more widespread use and acceptance of their products.

Most housewives apply their insecticide as they would shoot a gun, and spray directly at the flies or other insects they wish to kill. This is done because it is the natural and practical way of striking at a disliked object. The accepted directions which read to the effect to fill the room with mist and then wait several minutes before removing the dead flies, are not followed by most housewives. They seem impractical to the busy housewife. Some measure of economy may enter into this use, but on the whole it is the desire for direct action coupled with the customary use of inefficient sprayers which determines her technique.

No housewife was encountered who had ever used spray for nits or lice on human heads. It is doubted that such use could be recommended by the manufacturer for the ordinary household liquid insecticide, as such use might be considered of a medicinal character.

Only a couple of women were willing to indicate any experience with bedbugs. From their reactions, it is evident that the housewife has a marked distaste for this form of insect life and hesitates to cope with it single-handed. If she can afford to do so, she is prone to call in a professional exterminator and let him handle such situations.

An unusual case of bedbug and louse control was encountered in a rural town where the housewife had used her spray with decided success in her chicken coop. She sprayed the roosts and nesting areas regularly, and completely eliminated the bedbugs and

lice that had plagued her chickens the previous year. This was a point of a good deal of satisfaction with this customer and may have significance for manufacturers selling in sections where there is considerable poultry raising.

It was clear that the majority of housewives had used only the single-action type of sprayer, as contrasted to the continuous type of sprayer. If one were seeking a single answer for the non-general use of spray by housewives, he should not have to look much further than this particular practice. It is inherent in the functioning of the small, single-action sprayer that insecticide is so inefficiently dispersed, it cannot but fall short of the best job on almost any insect problem.

One could not expect to put modern high-test gasoline into a twenty-year-old car and expect to obtain good results. And the same applies to insecticides. One cannot expect to put the modern, hard-hitting spray in a sprayer relic of bygone days and expect it to function with up-to-date effectiveness.

The more general and housewife-appealing uses such as clothes spraying, garden spraying, picnic spraying, and even mosquito spraying are unquestionably reduced by inefficient instruments of application. It does not seem reasonable on the part of manufacturers to produce superior sprays and then let the spray down with poor sprayers. In some instances these cheap sprayers are even offered free with purchase of first-class spray.

The only single factor which seems to keep these inefficient spray guns on the market is cheapness, and a probable lack of realization on the part of manufacturers of what they are doing to their spray market when selling such guns in connection with good sprays. Efficient continuous sprayers are available but they are comparatively expensive. Nevertheless, manufacturers of spray, at even some sacrifice of immediate profits, would do well to recommend only this type of sprayer to be used with their spray.

Housewives who have purchased spray for a particular job such as for clothes moths or roaches, keep their

sprayer out of sight. Those who use spray for flies and mosquitoes usually keep it handy. There is evidently need for more compact, streamlined sprayers which do not take up much shelf space. If possible, the idea of sprayers provided with some means of hanging to a hook when not in use might be considered.

Practically all sprays that reach the consumer these days are perfumed. Most housewives prefer perfume in their spray although they largely indicated indifference to the particular type of perfume used. A few women would prefer no perfume at all, but do not raise any serious objection to perfume being present. It appears evident that the present practice of perfuming spray is still the safest procedure to follow from the angle of consumer acceptance. Since the few women who prefer no perfume at all do not object to perfume, the consideration of so-called "odorless" sprays for general household sale does not seem advisable.

Performance

As previously discussed, housewives expect to knockdown and kill flies when spraying directly at them. There were no complaints concerning the effectiveness of sprays used from the housewives interviewed. In some respects the over-all demand made on sprays is not as heavy as might be presumed. On the other hand, one can also say that the general level of effectiveness of present day sprays is more than enough to provide the margin of safety needed within present limits of use.

Even though no objections were raised, several women had noticed improved knockdown in some sprays as compared to others. This is a particularly pertinent observation in view of the usual sprayers used. The knockdown action of the majority of present day sprays is efficient, but not spectacular. General use of continuous sprayers by the housewife should tend to level this particular aspect of performance between sprays and give greater emphasis to their effectiveness. Housewives generally had not noticed any insects recover later which had

once been knocked down by their spray. This confirms their acceptance of sprays as sufficiently potent to handle their general household insect problems.

Most housewives find fly spray containers easy to open and easy to pour from without spilling. A few indicated a preference for some funnel arrangement or lip on the container to facilitate pouring. Upon questioning, others indicated indifference to such a change.

Most women seem to be satisfied enough with the sprayers they use. This is natural enough for the "push-squirt" type users because they mostly have had no experience with any other. From personal experience the writer has noted over and over again that it is only when a continuous sprayer is once used by the housewife, that its advantages are appreciated. Literally, the housewife is astonished by the difference, and she readily agrees that the effectiveness of sprays is much enhanced with such a sprayer.

One can well say that the future of liquid insecticides will be united directly with the future of sprayers. The majority of women will fail to see the advantages of an AA spray over the fly-swatter as long as it is used in a "push-squirt" sprayer. Until the continuous sprayer is widely available, housewives will not see the all-around adaptability of spray and never get accustomed to its more general use.

Experience from Use

THE series of questions covered by this section were designed to uncover adverse criticism of the modern liquid insecticide. This proved to be minor. The housewives were satisfied with the all-around performance of their spray, and had had no extraneous difficulties resulting from its use such as staining walls, woodwork, or contamination of food. Several users had had spray left over from the previous season and were satisfied that it had not deteriorated to any noticeable extent. There had been no reported experience of any irritating effects of spray to either adults or children. No

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REARING FABRIC PESTS

By *F. W. Fletcher*
and *E. E. Kenaga*

Dow Chemical Company

THE standardization of fabric pest deterrent test procedures is stimulating interest in the development of uniform rearing techniques for fabric pests. This particular investigation is concerned with the selection of a suitable rearing medium for the black carpet beetle, *Attagenus piceus* Oliv. An attempt was made to evaluate the rearing qualities of the more commonly employed food substances, as well as mixtures of these materials.

A large number of different kinds of foods have been used in rearing the black carpet beetle. Fish meal was first used by Griswold in 1933 as a clothes moth rearing medium. Since then it has been used for rearing black carpet beetles by Griswold (1937 and 1941) and Moore and Moore (1941). Probably it is the most widely used food medium. Some laboratories prefer to use ground dry dog food, as suggested by Heal (1942), for a culture medium. Another food material used in rearing this insect is corn meal, suggested by Moore and Moore (1941). To a lesser extent rolled oats, chicken feathers, fur, raw wool, scraps of woolen cloth were used by Griswold (1937 and 1941). Yeast, which was found by Colman (1922) to be so essential as a dietary supplement in rearing the clothes moth, also was found by Moore and Moore (1941) and Heal (1942) to be beneficial in rearing the black carpet beetle. Woolen scraps added to the surface of cultures by Griswold (1941) or woolen scraps saturated with yeast by Heal (1942) not only

TABLE 1
Food Mixtures Used in Black Carpet Beetle Studies
Food Materials in Per Cent

No. of Food Mixture	Fish Meal	Dog Food	Corn Meal Yellow	Brewer's Yeast	Woolen Scraps
1	25	72	0	3	2 g.
2	0	72	25	3	2 g.
3	72	0	25	3	2 g.
4	0	97	0	3	2 g.
5	97	0	0	3	2 g.
6	0	0	97	3	2 g.
7	32	32	32	4	2 g.
8	48	0	48	4	2 g.
9	0	0	0	x	2 g.
10	0	0	0	0	2 g.

x = equivalent to amount of yeast used in cultures 1 to 7.
* Laur's ground dry dog food (a local brand).

serve to some extent as a larval food but also as a place for oviposition.

Procedure

TEN different mixtures composed of fish meal, dog food, corn meal, brewer's yeast, and woolen scraps in different proportions were selected for study. (See Table 1.) One hundred cubic centimeters of each mixture were placed in 8-ounce glass bottles with screen covers. At the end of four months the old mixtures were replaced by fresh media. Fifty black carpet beetle larvae averaging between 4.3 and .3 mg. in weight were placed in each culture jar. The experiment was conducted under a constant temperature of 80° F. \pm 2, and a relative humidity

of 55% \pm 10. At fixed intervals (see Table 2) the insects were separated from each culture medium by sifting the food through a 16-mesh sieve. The larvae were then weighed and counted. At the same time the number of insects in each life stage, and the mortality were notated, the summary of which is shown in Table 3. Larval weight measurements were discontinued at the end of six months because pupation reduced the number of larvae. The recording of data on development was terminated at the end of eight months since the maximum difference in development was shown by the great range in per cent pupation. The poorest culture had 2% pupation, while the best had 84% pupation.

The BLACK CARPET BEETLE,--
a study of culture media in rearing
specimens for standard deterrent tests

TABLE 2
Growth Studies on Black Carpet Beetle Larvae

Average Weight of Larvae in Mg.

Food Formula Number:	1	2	3	4	5	6	7	8	9	10
At start of test	4.3	4.3	4.7	4.5	5.0	4.0	5.3	4.6	5.2	5.2
1 month	8.0	8.0	9.4	8.4	7.1	7.4	8.9	8.4	6.5	5.1
2 months	9.2	9.0	10.6	10.6	9.4	8.0	10.0	9.4	7.6	5.1
4 months	10.4	9.5	10.8	10.8	10.0	8.4	10.6	10.2	8.1	4.9
6 months	12.3	11.7	15.0	12.7	12.0	10.0	12.0	13.0	8.9	4.4
% gain (+) or loss (-) in weight in 6 months	+182	+168	+219	+182	+140	+150	+126	+182	+71	-15

Results and Discussion

IN surveying the results of these tests, certain criteria were selected to determine the best type of food for the black carpet beetle. Among these factors were per cent mortality, per cent gain or loss in weight of larvae during the test period, per cent larvae maturing to adults, and whether young were produced abundantly. All of these criteria are inseparably associated with each other. The results of these tests are as shown in Tables 2 and 3.

The mixtures may be classified into four general groups in reference to whether they are feasible as rearing media. Group one, containing food culture No. 3, surpassed all other mixtures in every measurement of comparison. Its composition consisted of 72 per cent fish meal, 25 per cent corn meal, 3 per cent brewer's yeast, and woolen scraps. This food medium produced the following results in regard to the black carpet beetle: 219 per cent increase in weight of larvae; 8 per cent mortality; 82 per cent larvae matured to adults; 8 per cent of original larvae not pupated; and many larvae produced. The second group including cultures Nos. 1, 2, and 4 are all acceptable because growth and development appeared normal. Group three, including mixtures 5, 6, 7, 8, and 9 are not desirable as cultures because growth and development of the insects were slow. High mortality occurred in culture No. 6, and reproduction did not take place in No. 9. In the fourth group, consisting of food culture No. 10, the larvae lost weight, development was extremely slow, and there was no reproduction. This culture is naturally not acceptable.

An attempt was made to eval-

ate the rearing qualities of each of the main food constituents including fish meal, corn meal, dog food, brewer's yeast, and woolen scraps. Fish meal is not entirely sufficient alone or with yeast. It is excellent in proper proportions in mixtures with dog food or corn meal, as already indicated in cultures No. 1 and 3. Corn meal is very poor alone or with yeast but if mixed with a larger portion of dog food or fish meal it makes an excellent medium. It was noticed that the greater the per cent of corn meal present in the mixtures, the greater the per cent mortality. Therefore it is advisable not to use more than 25 per cent corn meal in a given mixture. Dog food is acceptable alone or when used with yeast and woolen scraps. No improvement is made by the addition of fish meal or corn meal; in fact, by using an equal mixture of dog food, fish meal, and corn meal, (culture No. 7) a marked decrease in larval growth and development occurred. The yeast supplement aided materially in growth, development, and reduction in per cent mortality.

Larvae feeding on woolen scraps

and yeast gained weight and 24 per cent reached maturity, while those feeding on cloth alone lost weight and none reached the adult stage. It is interesting to note that in cultures Nos. 6, 9, and 10 considerable feeding was apparent on the woolen scraps at the end of the first month. By the end of the fourth month cultures Nos. 5, 7, and 8 also showed feeding. All other cultures, namely Nos. 1, 2, 3, and 4 showed no appreciable feeding at any time during the test. This indicates that in the four best cultures, woolen cloth was not attractive to the larvae as a food material. Thus, woolen fabric seems to be the least preferable of the five foods since larvae ate it only when the other foods in the culture proved to be inadequate.

Summary and Conclusions

TEN mixtures composed of varying proportions of fish meal, dog food, corn meal, brewer's yeast, and woolen scraps, were selected for study in order to determine the most desirable food medium for rearing the black carpet beetle.

Culture No. 3, consisting of 72 per cent fish meal, 25 per cent corn meal, 3 per cent brewer's yeast, and 2 grams of woolen cloth, provided the most satisfactory results. Food mixtures Nos. 1, 2, and 4 were acceptable, while Nos. 5, 6, 7, 8, 9, and 10 were not.

In regard to the value of the five food materials used in the mixtures, dog food was superior to either fish meal or corn meal. However, proper proportions of a mixture of fish meal and corn meal, as shown in culture No. 3, are a better rearing medium

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TABLE 3
Summary of Feeding Tests on the Black Carpet Beetle at the End of 8 Months

	Food Mixtures									
Number:	1	2	3	4	5	6	7	8	9	10
% mortality	14	14	8	14	16	44	18	24	18	44
% adults	70	68	82	66	24	30	24	50	24	0
% pupae	0	2	2	2	4	0	2	4	4	2
% original larvae left	16	16	8	18	56	26	56	22	54	54
Number of young larvae produced*	100+	100+	100+	100+	15	75	100+	50	0	0

* When cultures contained large numbers of larvae counting was discontinued after 100 was reached.

TEPHROSIA EXTRACT Against House Flies...

By Howard A. Jones and W. N. Sullivan

Bureau of Entomology & Plant Quarantine, U.S.D.A.

SEVERAL years ago it was shown that kerosene extracts of derris and cube roots are toxic to houseflies³. Since the supply of derris is now cut off, and shipments of cube may be curtailed,* the possibilities of similar extracts of the domestic plant *Tephrosia virginiana* take on a new importance. Tests with kerosene extracts of this plant reported in 1935⁵ were not promising, but it has seemed worth while to try some of the new strains that have since become available. As the tendency in the trade has been to use added solvents to hold rotenone and rotenoids in solution in kerosene fly sprays, attention should be again called to the fact that straight kerosene extracts of rotenone-bearing roots have possibilities for this purpose.

In the work described in this paper four samples of *Tephrosia virginiana*, three of cube, and two of derris root were used. Analyses of these roots for rotenone, total extract, and Goodhue red color value⁴ are shown in Table 1. The *T. virginiana* samples were typical of those being grown by the Bureau of Plant Industry of the U.S. Department of Agriculture and the Texas Agricultural Experiment Station.* The first two cube roots (I.D. Nos. 4738 and 5677) were commercial samples, and the third (I.D. No. 5891) was an authentic specimen of *Lonchocarpus nicou* (now *utilis*), grown by the Puerto Rico Experiment Station,** which had an unusually high content of red-color-

* Since this manuscript was prepared the use of rotenone-bearing materials has been greatly restricted by the War Production Board. The information presented here, however, will be of value when the supply is again sufficient for these restrictions to be removed. It may also aid in relieving the present shortage.

Table 1—Analyses of rotenone-bearing roots and their kerosene extracts.

Sample (I.D. No.)	Analysis of roots				
	Rotenone Per Cent	Total extract (CHCl ₃) Per Cent	Red color Value Per Cent	Red color values of kerosene extracts Per Cent of root	Mg. per cc.
Tephrosia:					
4434	2.4	7.4	5.5	0.5	0.6
4668-1	2.2	9.9	4.6	0.8	0.95
4668-4	2.9	8.8	5.0	0.7	0.85
5841	2.1	9.2	4.8	0.7	0.85
Cube:					
4738	4.6	21.4	7.0	0.7	0.85
5677	4.3	19.2	6.7	1.2	1.4
5891	2.7	11.7	8.3	1.4	1.7
Derris:					
2288	0.4	16.2	1.4	0.2	0.25
4174	3.3	12.8	5.2	0.9	1.1

forming compounds. Both derris roots were commercial samples, one being of the very low rotenone sort frequently called "Sumatra type." Some of these roots were finely powdered, whereas others were comparatively coarse.

Preparation of Extracts

To prepare kerosene extracts of these roots 6-gram samples in Erlenmeyer flasks were treated with 50 cc. of purified kerosene. This is approximately equivalent to 1 pound of plant material per gallon of kerosene. The kerosene was refined particularly for use in fly sprays and had a restricted boiling range and a high unsulfonatable residue. The samples were allowed to stand in this solvent at room temperature, with frequent swirling, for about one week, and were then filtered by

suction. The clear filtrates were used for the fly tests. Aliquots of these filtrates were analyzed for red-color-forming compounds (the kerosene was removed under reduced pressure and the tests were made in acetone solution), with the results shown in Table 1.

On comparing the percentage values for the roots and the extracts it will be noted that only 9 to 18 per cent of the red-color-forming compounds originally present in the roots were extracted by this method.

Marks from this extraction were treated with 50 cc. of 50-50 acetone-

** The samples of *Tephrosia virginiana* were kindly furnished by A. F. Sievers, of the Bureau of Plant Industry, U.S.D.A., and V. A. Little, of the Texas Agricultural Experiment Station; and the sample of *Lonchocarpus nicou* by R. H. Moore, of the Puerto Rico Experiment Station, Mayaguez, P. R.

A study of toxicity of kerosene extracts of tephrosia, cube and derris to houseflies shows tephrosia may have fly spray possibilities.

Table 2—Mortality to houseflies of extracts of rotenone-bearing roots.

Sample (I.D. No.)	Kerosene extract of root ¹		Acetone-kerosene extract of marc ²	
	Mortality in 48 hours	Mortality in 72 hours	Mortality in 48 hours	Mortality in 72 hours
	Per Cent	Per Cent	Per Cent	Per Cent
Tephrosia:				
4434	50	76	99	100
4668-1	60	89	100	100
4668-4	69	89	100	100
5841	64	87	96	98
Cube:				
4738	66	88	100	100
5677	73	96	99	100
5891	81	96	100	100
Derris:				
2288	77	98	99	100
4174	72	95	99	100
Pyrethrins in kerosene (O.T.I. 1941)	24	25	50	53
Pyrethrins in 50-50 kerosene-acetone (0.1 g. per 100 cc.)	46	49	81	83

¹ Each value represents the average of 4 tests of about 150 flies each.² Each value represents the average of 2 tests of about 150 flies each, except that only 1 test was made on I.D. No. 5841.

kerosene mixture and extracted in the same way except that filtration was by gravity instead of suction. The amount of acetone used was sufficient to dissolve all extractives in the root of highest extract content if these substances are of the order of solubility of rotenone. However, since the object here was merely to show the degree of toxicity left in the marc, complete extraction was not necessary.

Tests with Houseflies

Both the kerosene extracts of the roots and the acetone-kerosene extracts of the marcs were tested against houseflies by the turntable method². The mortalities obtained in 48 and 72 hours are shown in Table 2, compared with results for the N.A.I. D.M. Official Test Insecticide and a 50-50 acetone-kerosene solution of the pyrethrins of the same strength as the O.T.I. Both the 48-hour and the 72-hour results with the kerosene extracts, including the pyrethrin standards, were comparable with each other, as were also those with acetone-kerosene extracts, but results with kerosene extracts were not comparable with those with acetone-kerosene.

All the kerosene extracts were highly toxic when compared with the O.T.I. The effectiveness of extracts of all the samples of *Tephrosia*, even though their total chloroform extract content was lower than that of the derris and cube, indicates that this

domestic plant should be a suitable substitute for derris and cube in fly sprays. The high toxicity of the extract of *Lonchocarpus nicon* (I.D. No. 5891), a root of comparatively low rotenone and total-extract content, together with its high content of red-color-forming compounds, also emphasizes the importance of constituents other than rotenone in accounting for the toxicity of some samples. As in earlier work, the derris root of low rotenone content (I.D. No. 2288) gave a kerosene extract of a high order of toxicity. This root and its kerosene extract both showed a low content of red-color-forming compounds. However, derris roots of this type (low rotenone, high total extract) are known to be high in toxicarol, which does not react in the red color test. Toxicarol as it occurs in the root (1- α -toxicarol) has been found to be moderately soluble in petroleum solvents¹. Thus the toxicarol content of the extract of I.D. No. 2288 may account largely for its toxicity. This is further evidence that the rotenoids (compounds other than rotenone) play a large part in the toxicity of kerosene extracts of rotenone-bearing roots.

The high kills obtained at the concentration used in these tests suggest that for practical use the proportion of root to solvent could be reduced. The extracts were made at room temperature and might show some separation if chilled; however,

if made at a lower concentration this would not occur. Fly-spray manufacturers would also probably wish to add a knockdown agent to obtain a complete fly spray. If so, the proportion of rotenone-bearing root might be still further reduced.

Inasmuch as the acetone-kerosene extracts of the marcs from kerosene extraction gave practically complete kills in 48 hours (Table 2), it should be possible for a manufacturer to obtain a kerosene extract toxic to houseflies and then use the marc to prepare extracts or dusts for other purposes. The higher kills with the acetone-kerosene pyrethrum check than with the O.T.I. in straight kerosene should be noted.

Conclusions

The results demonstrate that the domestic plant *Tephrosia virginiana* may be successfully substituted for derris and cube roots in fly sprays. The work also indicates that no added solvent is necessary to obtain kerosene extracts of rotenone-bearing roots with a high degree of toxicity to houseflies.

The insecticidal importance of constituents other than rotenone is again emphasized. An important subject for further work would be the investigation of the petroleum-soluble toxic compounds present in rotenone-bearing roots.

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Insect Repellents

Compositions suitable for use on the skin or clothing to repel insects are formed containing dibutyl *l*-malate, diethyl *dl*-malate, benzyl lactate or tetrahydrofurfuryl lactate, suitably mixed with corn oil or other vegetable or mineral oil. Philip Granett, to National Carbon Co. U. S. Patent No. 2,274,267.

Red Squill Extract

Red squill is extracted by a countercurrent process by means of 80 per cent alcohol. The method is easily adapted to large- or small-scale operations, the solvent being recovered for re-use in the process. The extract can be used to fortify red squill powder. The fortified squill retains all of the safety factors inherent in red-squill powder. D. Glen Crabtree, Justus C. Ward and F. E. Garlough. J. Am. Pharm. Assoc. 31, 142-4 (1942).

Insect Repellents

Together with an inert diluent such as a vegetable oil, use is made of diethyl adipate or other repellent consisting of at least one ester of a saturated aliphatic acid such as a dicarboxylic acid having 6 carbon atoms to the molecule. The ester should contain 6-15 carbon atoms. Such compositions are suitable for use in lotions, creams and powders. Phillip Granett, to National Carbon Co. U. S. Patent No. 2,273,860.

Brazilian Pyrethrum

The soil, climate and farming conditions in the higher altitudes in Rio Grande do Sul and other states in southern Brazil are well adapted for the cultivation of pyrethrum. Numerous analyses by the method of Seil have shown that the sum of pyrethrin I and II in the flowers grown there exceeds in most cases 0.95 per cent. Smaller percentages are usually caused by faulty methods of collection and manipulation.

The pyrethrins occur principally in the achenes which may be lost by excessive drying, poor storage con-

ditions or overripeness. As much as 30 per cent of the pyrethrins may be lost during storage for one year. The flowers should be collected as soon as they open. When the moisture has fallen below 13 per cent they should be baled under high pressure. The dried material should not contain more than 7 per cent of ash or 0.4 per cent of ash insoluble in hydrochloric acid. W. Mohr. Rev. quim. ind. (Rio de Janeiro) 11, No. 119, 16-23, 88-95 (1942); through Chem. Abs.

Insecticide Particle Size

Toxicity tests have shown that in general the smaller the particle size of a solid, the more effective it is. Greater subdivision of plant materials such as derris and pyrethrum, the organics such as phenothiazine, would undoubtedly improve their action. With oil sprays the quantity of oil appears to be more important than the size of the droplets. Solids and liquids can both be applied in aerosol form. The degree of fineness and stability of such aerosols can be improved by means of protective smokes and by surface-active agents to the point where many new fumigants may be developed. As an example, naphthalene in the presence of smoke is from 7 to 10 times more effective than when vaporized alone. Lauric and oleic acids, as well as their glycol esters, increase greatly the effectiveness of ortho-dichlorobenzene. Since this discovery, a small amount of oleic acid has been used with every new insecticide tested in aerosol form. Charles M. Smith and Lyle D. Goodhue. Ind. Eng. Chemistry 34, 490-3 (1942).

Automobile Polish

A polish suitable for automobiles, furniture, bakelite, etc., consists of a three-phase emulsion of a petroleum-hydrocarbon lubricating medium, a polishing-base medium, and water as a continuous phase. The polishing base is a fatty-acid mono- or diglyceride substantially immiscible with the lubricating medium and with water. Leroy W. Shuger, to Baltimore Paint & Co. or Works, Inc. U. S. Patent No. 2,275,596.

Derris Constituents

The roots of derris and allied plants contain several constituents having some insecticidal action, in addition to that of rotenone, as shown in the accompanying table. All the values in the table are relative to that of rotenone as 100. Direct comparison of the compounds with each other is not entirely valid, as all were not tested in the same way or against the same insect. Comparisons are further complicated by the use of different criteria for toxicity. H. L. Haller, L. D. Goodhue and Howard A. Jones. Chem. Reviews 30, 33-48 (1942).

Pyrethrum Extracts

The flowers and green parts of pyrethrum plants from southern Crimea were 26 and 74 per cent by weight, respectively, of the plants, and the pyrethrin contents were 0.32 and 0.07-0.08 per cent, respectively. Extraction with dichloroethylene for five hours at 65-90° C. was equally effective on flowers, green parts or seeds and the extracts from the flowers and green parts were equally toxic to *Brevicoryne brassicae* (L.).

Laboratory tests showed that mineral oils with a viscosity not exceeding 1-2° Engler at 50° C. were the best carriers for pyrethrum extracts. The oleoresins obtained by vacuum evaporation of the solvents were heated with the oil in the ratios 1:1 to 1:2 for transfer of the pyrethrins to oil. The best results in extracting the active principles from species of *Tephrosia* were obtained with chloroorganic solvents such as chloroform, carbon tetrachloride, dichloroethylene, or with benzene. Hot extraction gave more effective products than cold extraction and the toxicity of the extracts was greater when they were dispersed in mineral oils. Rev. Applied Entomol. 29A, 569-86.

Insecticide Stabilizer

A compound to stabilize insecticidal preparations is an acidyl amino diarylamine such as *para*-(*para*-toluene sulfonyl amino) diphenyl amine. Wm. P. ter Horst, to Dominion Rubber Co., Ltd. Canadian Patent No. 403,797.



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TRANSPORTATION Under War Conditions

By George M. Jackson*

Interstate Commerce Commission

MANY well-informed people have expressed the opinion that transportation is one of the greatest, if not the greatest problem confronting this country during the present emergency. Every man, woman, and child is, to some degree, dependent upon transportation even during normal times, and it takes little imagination to visualize the increased demands and burdens which are placed upon our transportation facilities by an emergency such as a war.

Increased volume of traffic; inability to secure the additional motive power and cars necessary to handle this increased traffic; inability to secure other necessary machinery and equipment; inability to secure materials for making needed repairs to present equipment; withdrawal of coastwise and intercoastal steamships, including oil tankers and coal colliers; discontinuance of the manufacture of commercial automobiles and trucks; shortage of rubber and gasoline; the restricted use of commercial airlines; and the shortage of trained personnel, principally skilled mechanics, train dispatchers, and train crews, all contribute to the creation of a tremendous transport problem.

It is quite obvious, even to a layman, that the successful prosecution of a war requires an adequate supply of motive power and rolling equipment, as well as the maximum efficient use of such equipment. It is useless to produce materials and instruments of war and train a fighting force

unless there is an adequate supply of transportation facilities to transport them to destination, or to theaters of action.

A few figures are necessary to set the background for our present transportation problem. During the calendar year 1926 Class I railroads loaded 53,247,131 revenue freight cars,—the greatest number loaded in any year in history. In 1941, 42,446,034 cars were loaded, compared with 36,603,522 in 1940, and 44,749,617 in 1918. As of December 31, 1926, Class I railroads owned 2,336,470 freight cars of all types compared with 1,693,978 in 1941; 1,640,006 in 1940, and 2,270,532 in 1918.

The 1941 carloadings showed a decrease of 20.3% compared with 1926, while the number of cars owned showed a decrease of 27.5%. The 1941 carloadings showed an increase of 15.9% compared with 1940, while the number of cars owned showed an increase of only 3.3%. The 1941 carloadings showed a decrease of 5.1% compared with 1918, while the number of cars owned showed a decrease of 25.3%. The average capacity of a freight car as of April 1942 was 50.47 tons compared with 41.6 tons in 1918.

The present average turnaround time, or the time consumed by a freight car from the time it leaves the point of origin under load until it has made its journey to destination, been unloaded and returned to point of origin and again loaded ready for its next journey, is 13.9 days compared with 16.1 days as of October 1918.

The greatest number of revenue cars loaded in any one week was 1,208,878, which were loaded during the week of October 30, 1926, compared with 861,353 loaded during the week of April 25, 1942, and 922,884 loaded during the week of October 18, 1941, which were the peak loadings for each of the two latter years.

The percentage of freight cars awaiting repairs as of May 15, 1942, was 3.6 compared with 6.8% as of December 31, 1940, and 5.8% as of December 31, 1918.

By loading 38.2 tons per freight car, on the average, shippers by rail established a record in 1941. This is an average of half a ton more than in 1940, and an increase of 4½ tons in the past 20 years.

Many of you no doubt recall conditions which prevailed in the transportation field during World War No. 1, which brought about Federal control of the railroads. Many valuable lessons were learned from mistakes made during the period of Federal control, and today we are profiting by some of those lessons. One of the principal lessons learned was that it is necessary to have a broad nation-wide transportation policy. The Transportation Act, as amended, gives the Interstate Commerce Commission broad powers which may be exercised to control railroad transportation, and yet leave the physical operation of the equipment to the individual carriers. These powers have also been broadened to include other modes of transportation.

Section 1, paragraph 15, of Part I of the Act provides that whenever the Commission is of opinion

* Address before the 28th mid-year meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., Chicago, June, 1942.



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that shortage of equipment, congestion of traffic, or other emergency requiring immediate action exists in any section of the country, the Commission shall have, and it is given, authority, either upon complaint or upon its own initiative without complaint, at once, if it so orders, without answer or other formal pleading by the interested carrier or carriers, and with or without notice, hearing, or the making or filing of a report, according as the Commission may determine: (a) to suspend the operation of any or all rules, regulations, or practices then established with respect to car service for such time as may be determined by the Commission; (b) to make such just and reasonable directions with respect to car service without regard to the ownership as between carriers of locomotives, cars, and other vehicles, during such emergency as in its opinion will best promote the service in the interest of the public and the commerce of the people, upon such terms of compensation as between the carriers as they may agree upon, or, in the event of their disagreement, as the Commission may after subsequent hearing find to be just and reasonable; (c) to require such joint or common use of terminals, including main-line track or tracks for a reasonable distance outside of such terminals, as in its opinion will best meet the emergency and serve the public interest, and upon such terms as between the carriers as they may agree upon, or, in the event of their disagreement, as the Commission may after subsequent hearing find to be just and reasonable; and (d) to give directions for preference or priority in transportation, embargoes, or movement of traffic under permits, at such time and for such periods as it may determine, and to modify, change, suspend, or annul them. In time of war or threatened war the President may certify to the Commission that it is essential to the national defense and security that certain traffic shall have preference or priority in transportation, and the Commission shall, under the power herein conferred, direct that such preference or priority be afforded.

The term "car service" includes the use, control, supply, movement, distribution, exchange, interchange, and return of locomotives, cars, and other vehicles used in the transportation of property, including special types of equipment, and the supply of trains, by any carrier by railroad subject to Part I of the Act.

IN the early part of 1941 many contradictory opinions were expressed as to the ability of the railroads to handle the burden of traffic which it was anticipated they would be called upon to transport, and some well-informed individuals predicted a serious car shortage by the fall of that year when the peak movement usually occurs. But the Commission

felt that if the railroads and all users of freight equipment would cooperate to the fullest extent by using such equipment to the highest degree of efficiency such a shortage could be averted, or at least postponed, thereby eliminating the necessity for exercising its emergency powers.

In April 1941 the Commission began to give serious consideration to the supply and handling of freight equipment, and a program of elimination or reduction of car detentions and the expeditious handling of such equipment was inaugurated.

The Commission's Bureau of Service, which is charged with the administration of car service matters, instructed its field representatives to locate all points where cars were being held for an undue length of time, for any reason, in railroad terminals and yards or at industries, including Army camps, Government construction projects and Naval bases, and to use their best efforts with railroad and industrial officials to prevent or reduce such detentions. They were directed to call upon the industries and railroads and point out the necessity for having a usable and sufficient supply of cars, and to ask for their cooperation in our program.

Many industries were of the opinion that if they paid the demurrage which accrued on the cars used they were entitled to hold them as long as they saw fit. Of course they were entitled to do this according to the tariffs, but when a country is faced with an emergency such as the one which we now face, there is a higher responsibility than that of merely complying with the provisions of a tariff or even those of a law.

During normal times when freight cars are plentiful the railroads are pleased to have the income which they derive from demurrage assessments. But conditions at the present time are not normal. Freight cars are not plentiful, and from all indications they are going to be less plentiful, so it behooves all who use freight cars to make the maximum use of them in order that the limited supply will go as far as possible toward transporting all the materials and supplies

necessary for the successful prosecution of this war. The primary purpose of a freight car is to transport freight, and when a car is used for any other purpose it is absolutely worthless as a vehicle of transportation.

Many delays were found chargeable to the carriers, the principal ones found were: Failure to place loaded cars promptly upon their arrival at destination; delay in pulling cars promptly when they are emptied; slow movement through terminals and classification yards; and slow handling through interchanges.

The principal causes for detentions chargeable to industries are: Ordering cars before ready to commence loading; ordering more cars than are actually needed at the time; not loading cars to their maximum capacity; ordering special types and sizes of cars when other types and sizes would be suitable; slowness in loading and unloading; using cars for storage purposes; circuitous routings; and failure to regulate shipping orders to prevent bunching of cars upon arrival.

Many cases of detention were caused not by a wilful disregard of the necessity for an adequate car supply, but by a tremendous industrial expansion which was not accompanied by a corresponding expansion of facilities for handling inbound and outbound shipments. In some instances the excuse was given that the industry was engaged in defense work and apparently it was thought that this was sufficient justification to permit it to use cars in any manner desired. The heads of numerous industries, when contacted and informed of their loading and unloading records, were surprised to find that such conditions existed at their plants.

Embargoes have been placed against several recalcitrant shippers and receivers of freight, some of which have been placed at our suggestion, although the Commission itself has ordered no embargoes. Our efforts in connection with car detention have not been confined to shippers and receivers of freight, but where instances of detention were chargeable to the



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carriers themselves, such instances have been handled vigorously with such carriers.

OUR bureau has worked in close cooperation with the Car Service Division of the Association of American Railroads, Shippers Advisory Boards, Chambers of Commerce, and other transportation groups, as well as the Office of Defense Transportation, since its inception.

While the response to our requests for cooperation from both the carriers and shippers was very gratifying and encouraging, and our efforts were producing excellent results, it was apparent that our small field force was totally inadequate for carrying on an intensive nation-wide program. Nevertheless the results which had been accomplished appeared to justify the work we were doing and to indicate that it should be prosecuted vigorously.

Prior to June, 1941, the Bureau of Service had a field force of 15 Service Agents. These agents maintained headquarters in principal railroad centers, and each covered an assigned territory of approximately three states. Their principal duties were to observe transportation conditions throughout the country, investigate informal complaints between carriers and shippers, and keep the Commission advised on transportation matters in general.

Arrangements were made for obtaining additional men and we now have 50 Service Agents scattered throughout the country. These men have had broad railroad operating experience, and with their experience and background we are of the opinion that they can successfully handle most any railroad transportation problem with reasonable assurance of helping in its solution. While we feel that our campaign has produced some excellent results, we regret to say that we are still plagued with car detentions and delays, for various reasons, by many railroads and industries.

In view of the vast increase in the volume of traffic which the railroads have been called upon to handle, and other factors which have affected

transportation generally, I am sure that practically all informed persons will agree that the railroads have done a splendid job, and that the cooperation received from the shipping public deserves our highest praise.

The peak of our production has not yet been reached. As there is little likelihood that the railroads will be able to secure the needed additional new equipment to handle this greater increase in traffic, it will be necessary for them to use all their available equipment to the highest possible degree of efficiency. The railroads will not be able to solve the transportation problems alone even though they do everything within their power. It will be necessary for all individuals and groups who use freight equipment to exert their best efforts toward solving these problems.

In addition to eliminating the causes of car detention which have been previously mentioned, shippers and consignees should work loading and unloading crews 24 hours a day and 7 days a week, if necessary, to release cars promptly, and take any other necessary steps tending to expedite the handling of equipment. It is just as unpatriotic to waste transportation facilities as it is to waste any other material or commodity which is necessary for the winning of this war. This struggle is not going to be won by words and promises, but by our united action.

The Commission maintains the position that no industry or individual can be permitted to tie up cars at the expense of others. It is sincerely hoped that all concerned with transportation will cooperate in this common cause to the extent that it will be unnecessary for the Commission to exercise its emergency powers.

The Bureau of Service desires to render every possible assistance to the railroads and to all users of freight equipment, as well as to the public in general, and we hope that each of you will feel free to call upon us when you are of the opinion that we can be of service to you. On the other hand, if at any time one of our representatives finds that any of your members are delaying cars for any reason and calls

upon you to cooperate in our program, we trust that we will receive your whole-hearted support and cooperation.

Insect Sprays and Housewife

(From Page 91)

women reported any damage to household plants or pets. Housewives do not consider spraying a fire hazard and are mostly aware that liquid insecticide is inflammable. The only instances the writer has known of spray difficulties have been due to ignorant handling,—such as spilling spray from a container on upholstery, and having a child take a drink of spray that had been carelessly left standing in a drinking glass.

(To be concluded)

Fabric Pests

(From Page 93)

than dog food. Yeast and woolen scraps are beneficial supplements.

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Automobile Wax

A wax dispersion suitable for use on automobile finishes is based on carnauba wax together with a dispersing soap formed from oleic acid, having a titer of less than 8°C., a fixed alkali such as caustic potash sufficient to saponify the oleic acid, and ammonia in excess to give the dispersion a slightly alkaline reaction to phenolphthalein. A waterproofing agent consisting of an insoluble casein compound such as one precipitated by zinc sulfate or formaldehyde, is also present. Henry C. Thompson. U. S. Patent No. 2,274,509.

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Coal-tar Naphtha Fumigants

The composition and properties of heavy coal-tar naphtha are studied with a view to improving and standardizing its application as a bedbug fumigant. The mixture having the highest toxic index contained 2 per cent of phenols, 15 of xylene, 40 of paraffins, and 43 per cent of unsaturated components. There is no indication of any component of heavy naphtha contributing significantly to the toxicity except those mentioned, and aromatics excluding xylene, present in some of the less toxic mixtures.

In order to describe a neutral coal-tar oil with speed and accuracy it is necessary to perform four operations: (1) Determine the boiling range in the A.S.T.M. standard Engler distillation apparatus. (2) Estimate the amount of unsaturated compounds by means of the modified bromide-bromate method. (3) Determine the paraffins by the aniline miscibility method. And (4) Measure the density at 20° C. and compare this with the density calculated from the results of (2) and (3). N. F. Sarsfield. *J. Soc. Chem. Ind.* 61, 2-6, 6-13, (1942).

Mildew Prevention

To prevent mildew on fabric such as that of fumigation tents, 0.2 pound of phenyl mercury oleate to 100 pounds of fabric is used, and prevents infection for considerable periods of time. Except under the most severe conditions, the protection is probably effective for two or more seasons. A. F. Swain and J. K. Primm. *Calif. Citrograph* 27, 158, 184 (1942).

Toxicity of Derris

Further studies on the toxicity of derris to albino rats showed that the quantity of total extractives, and the qualitative and quantitative composition of the extractives are more important factors in the chronic toxicity of derris samples than is the rotenone content. Evidence of liver injury has been found in albino rats receiving daily in the diet a concentration of derris or cubé corresponding to 75 parts per million parts of diet.

The variations in composition

of derris and cubé necessitate caution in making sweeping generalizations regarding the toxic properties of derris and cubé on the basis of studies on a few samples. A. M. Ambrose, F. Deeds and J. B. McNought. *Ind. Eng. Chem.* 34, 684-9 (1942).

Insecticide Solubilizers

A study was made of systems used as insecticides consisting of 3 components,—two liquids, petroleum oil and solubilizer, both miscible in all proportions, and an extract of rotenone-bearing roots which is very slightly soluble in the liquids. The extract is assumed to function as a single component. Good detection and fair determination of compatibility were obtained by rather slowly titrating solutions of the extracts in a solubilizer at 25°C. with the petroleum-oil component, and computing percentage composition of the components at the plait point or critical point. The data, plotted on triangular coordinate paper, give curves which separate the homogeneous from the heterogeneous compositions. Time and maximum temperature of digestion of the extract-solubilizer solution were not factors affecting the compatibility of the mixtures.

Three-component solubility curves were determined for systems containing a light-medium oil with unsulfonatable residue of 60-98 per cent, viscosity, Saybolt 100°F., 50.3-71 seconds,—a derris extract containing 33 per cent rotenone,—and a solubilizer. A heavy oil with an unsulfonatable residue of 99 per cent and a viscosity of 224 seconds, and kerosene, were used in some systems. The solubilizers were diphenyl oxide, oil of sassafras, methyl amyl ketone, dibutyl phthalate, 2-(4-*tert*-butylphenoxy) ethanol, Cardolite (a formaldehyde condensation product of cardanol, a constituent of cashew nutshell liquid), and diamylphenol.

The lower the unsulfonatable-residue value of the oil, the greater the quantity that can be added to a solubilizer-derris extract solution. The more volatile petroleum fractions such as kerosene have greater relative compatibility with solubilizer-extract

solutions than the heavier fractions. Compatibility of extracts of rotenone-bearing roots that differ in source is not a function of the rotenone content but of some other root constituent present in the extracts. Apparently the root extract does not function as a true component but as more than one component.

The phases that separate when oil is added to low concentrations of derris extract in a solubilizer are different from those separating from solubilizer solutions of higher extract content. Within certain concentration ranges, a phase separates that appears to consist of one or more of the resins of the root soluble in ethylene dichloride. A knowledge of the composition of the heterogeneous systems is important practically, because certain of these systems are effective insecticides for certain insects. In such systems the insecticidal constituents are probably in solution. J. F. Kagy and A. M. Boyce. *J. Econ. Entomol.* 34, 804-11.

Sesamin with Pyrethrum

Sesame oil acts as an activator in combination with insecticides made from pyrethrum, rotenone, etc. Since other vegetable oils do not increase the toxicity of pyrethrum insecticides, the oil was fractionated to determine whether different fractions would have a different effect. The oil was separated in a molecular still into 4 fractions: A waxy solid boiling up to 170°C., a viscous oil boiling at 170-230°C., a mobile oil boiling at 210-20°C., and the residue in the still. The first two fractions, when added to pyrethrins in a mixture of refined kerosene and acetone, show a very strong synergistic or activating action against houseflies. From these two combined fractions, sesamin is isolated in crystalline form. This by itself has no effect on flies. The noncrystalline fraction also has a strong synergistic action, but no crystalline product other than sesamin can be isolated from the active fraction. H. L. Haller, E. R. McGovran, L. D. Goodhue and W. N. Sullivan. *J. Org. Chem.* 7, 183-4 (1942).

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NEWS

Curlett Back To McCormick

John N. Curlett, vice-president of McCormick & Co., Baltimore, and president of the National Association of Insecticide & Disinfectant Manufacturers, who since the first of the year has been a dollar-a-year man in the Foodstuffs Branch of the W.P.B. in Washington and more lately Assistant Chief of the Foodstuffs Branch, resigned his connection with the W.P.B. on Sept. 1 and returned to service with his firm at Baltimore. The necessity for the return of Mr. Curlett to his desk at McCormick & Co. has been due to the number of employees of that company who have joined the armed forces.

Delta Becomes Erfar

Delta Chemical Company, Baton Rouge, La., manufacturers of sanitation specialties, became Erfar Chemical Manufacturers, on August 1. The firm retains the same address at 1837 Choctaw Road.

F. L. Campbell To War Work

Dr. F. L. Campbell, professor of entomology at Ohio State University and widely known in the insecticide industry for his research work in insect control methods, became associated August 24 with the Office for Agricultural War Relations of the U. S. Department of Agriculture as Senior Technologist. His work will be aimed to facilitate the wider use of insecticides, fungicides and disinfectants to increase food plant and animal production in connection with the war effort. He has obtained a leave of absence from Ohio State University for the duration of the war.

Dr. Campbell will work in the Chemicals Division of the Office for Agricultural Relations which is headed by Philip H. Groggins. Dr. R. C. Roark, well-known insecticide auth-

ority of the Department of Agriculture, who has been aiding in the work of the Chemicals Division will con-



DR. F. L. CAMPBELL

tinue to act as consultant for the Division but the bulk of the direct technical operations are being taken over by Dr. Campbell. Dr. Campbell is located in the South Building of the Department of Agriculture, Washington.

Insecticide Experts Needed

According to a letter from Miss Estelle D. Sullivan, executive secretary of the National Association of Insecticide and Disinfectant Manufacturers, the government is seeking well qualified persons with experience in the manufacture and distribution of insecticides. The positions pay \$2,600 a year and up, and appointees should have a college education with a major in economics, and experience of research work in the manufacture and distribution of insecticides. Their duties will include conducting investigations, analyzing price and cost data, negotiating with particular groups to set up reasonable price schedules and rationing controls, and evaluating the results achieved. Persons who feel they are qualified should write the Civil Service Commission for application

blanks. The government urges that immediate action be taken in this matter in the interest of the war effort. Miss Sullivan will be glad to forward the names of anyone interested to the Civil Service Commission since she has had correspondence with them on this matter and has been asked to furnish names.

Jasgo Expands

Louis Streimer, owner of Jasgo Chemical Co., 1253 St. Johns Place, Brooklyn, N. Y., has expanded manufacturing facilities by the purchase of a 30 x 100 foot building at 1128-30 St. Johns Place. This building will also be used for the manufacture of the Jasgo line of insecticides. The firm also distributes exterminating materials, industrial chemicals and paint supplies.

New Floor Wax Manufacturer

Chadakoff Chemical Products Co., located at 431 West 28th Street, New York City, has recently started the manufacture of floor waxes. The concern formerly confined its operations to the beauty products field, specializing in the manufacture of permanent waving preparations.

Exterminators To Use 12.20

Exterminators and fumigators who have been somewhat in doubt as to the exact allocation classification symbol which they are to use on orders under the Allocation System, have now been told that they may use the symbol 12.20. According to J. D. Bail, Jr., chief of the financial and business services section of the W.P.B., use of this symbol has been authorized for operators of industrial and home fumigating and exterminating service.

W. R. Howe In Army

W. Russell Howe, former partner with Harold King in King & Howe, and well known botanical drug import agent and broker, was inducted into the Army at Camp Upton, L. I., New York, August 28. He has been connected with the drug business since 1919.

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To Limit Insect Sprays To Glass Pints, Quarts

HOUSEHOLD insect sprays will shortly be packed only in pint and quart round bottles with 28 mm. caps for the small retail sizes if a recommendation of the Household and Industrial Insecticides Manufacturers Industry Advisory Committee to the War Production Board is accepted by the W.P.B. It was also recommended by this committee that one gallon glass containers of some standard type with a 38 mm. cap be adopted by the W.P.B. for insect sprays, and that other permitted containers be five gallon steel pails and 54 gallon steel drums. This report was presented to the W.P.B. at a meeting of the Insecticide Advisory Committee in Washington, D. C. on August 18, and means if accepted that all cans heretofore used will no longer be available, and in addition the complete elimination of the six and eight ounce, and other

small sizes excepting the pint and quart.

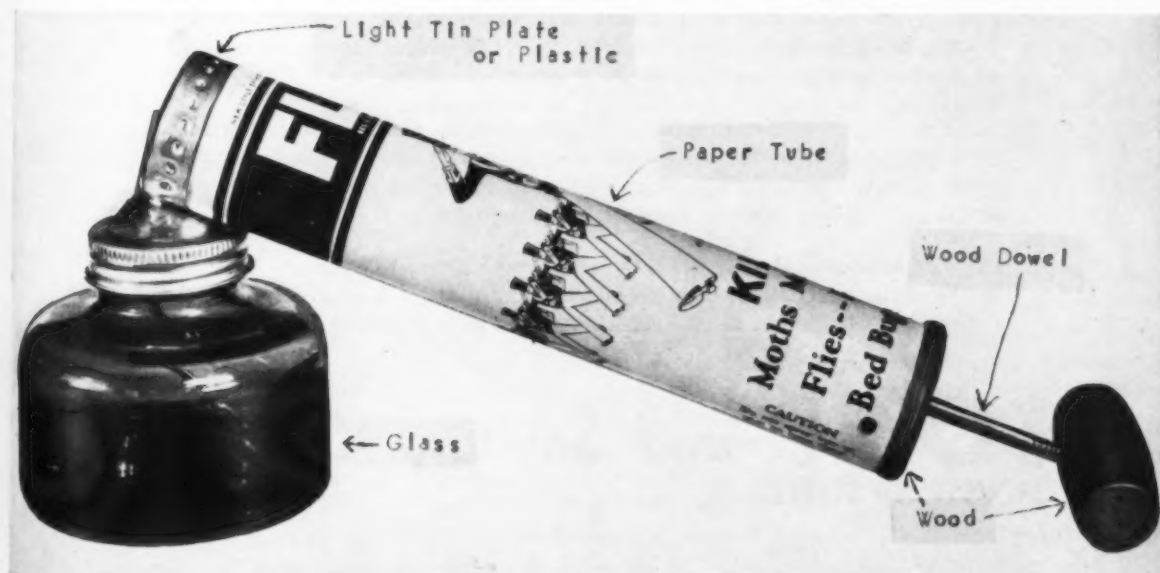
These recommendations have for their aim not only the saving of metals, but also a reduction in number of sizes and styles of bottles to facilitate production and hold down costs. If insecticide manufacturers are restricted to these two bottle sizes by W.P.B. order, which is fully expected in the industry, a request will be made to the O.P.A. to permit an increase in insecticide ceiling prices to allow for higher costs involved in the use of bottles. Some manufacturers are already packaging their sprays in glass bottles, all using amber glass, some using round bottles as recommended, and others the oval type. The type of round bottle recommended by the committee is known as "Boston rounds" in the glass trade.

At the Aug. 18 meeting of

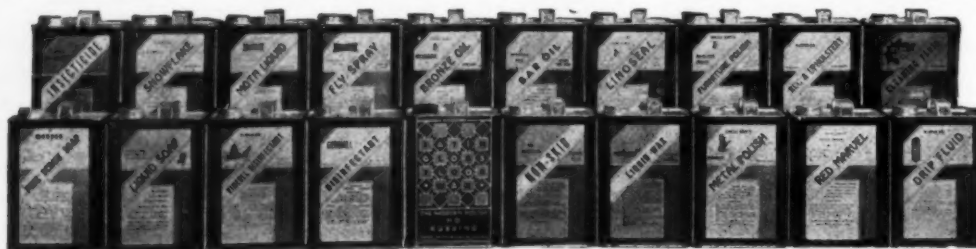
the Insecticide Advisory Committee, Melvin Goldberg of the Chemicals Branch, W.P.B. presided in place of Warren H. Moyer, Government Presiding Officer for the group. Members of the committee who were present included J. L. Brenn of Huntington Laboratories, Inc., Huntington, Ind.; H. W. Hamilton of the Koppers Co., Kearny, N. J.; W. O. Buettner of Buettner Pest Control Co., Brooklyn; Paul Mayfield of Hercules Powder Co., Wilmington; L. W. Jones of McCormick & Co., Baltimore; H. D. Williams of George L. Williams Co., Cleveland; W. J. Zick of Stanco, Inc., New York.

Among other problems of the industry taken up for discussion at the meeting on Aug. 18 was the problem of developing a suitable hand sprayer where the minimum quantity of metal or none at all will be used. A model of a new type made from paper board, wood, glass and a small piece of light tin plate was shown, and the possibilities of its commercial production are being investigated as a substitute for all-metal sprayers.

Small hand sprayer using minimum of metal or no metal at all as war-time replacement for all-metal sprayers no longer available. This sprayer was designed by Martin Vogel of Standard Container in conjunction with Stanco, Inc. and submitted to W.P.B. for general unrestricted use of all insecticide manufacturers. W.P.B. is reported investigating possibilities of its commercial production. If sprayers are to be made available to insect spray consumers for the 1943 season, next year they will have to be of a paper-wood-glass combination substitute type such as shown below.



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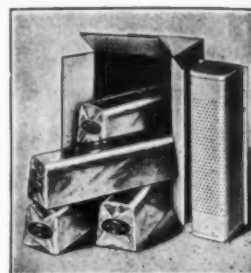


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Pyrethrum and rotenone supplies were discussed, it being noted that although there had been some increase in allocations of pyrethrum, the future depended wholly on the tonnage of arrivals from Kenya over the next few months. Rotenone supplier were estimated to be about 50 per cent of normal for 1943. Demand for synthetic insecticide materials was stated to be considerably in excess of supplies and production right now, with producers restricting deliveries to insecticide manufacturers.

A special meeting of the Advisory Committee to consider emergency problems in connection with the marketing of insect sprays for the 1943 season, was held on Sept. 1 in Washington. Two new members were chosen by the W.P.B. in addition to those already on the committee, bringing the total membership to ten. The new members are Dr. E. G. Thomssen of the J. R. Watkins Co., Winona, Minn. and Donald Martin of the Purity Chemical Co., Santa Rosa, Calif.

NPCA Meets October 26-28

The annual meeting of the National Pest Control Association is to be held October 26, 27 and 28 at the Hotel William Penn, Pittsburgh, Pa. The program is not as yet complete, but William Buettner, secretary of the association, advises that the following will be among the speakers to address the convention: Melvin Goldberg, Insecticide and Fungicide Specialist of the Chemical Branch of the War Production Board, Dr. Dove of the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, and Dr. James C. Munch of the Fish and Wild Life Service.

H. C. Fuller Dies

Henry C. Fuller, well-known chemical expert of Washington, D. C., died suddenly of a heart attack at the New Haven Hospital, New Haven, Conn., on August 27. He was returning from a vacation in Maine and was stricken on the train. Removed from the train at New Haven, he died a short time later in the hospital.

Mr. Fuller had been technical consultant to the National Association

of Insecticide & Disinfectant Manufacturers for the past five years. Prior to setting up his own laboratory and consulting service in Washington, about fifteen years ago, he was associated with the Food & Drug Administration of U. S. Dept. of Agriculture.

N.W.D.A. Victory Banquet

The National Wholesale Drugists Association which will hold its annual meeting at the Waldorf-Astoria Hotel, New York, the week beginning September 28 has announced elaborate plans for a victory banquet to be held the evening of Tuesday, September 29. This will be the first

time in the history of the organization that non-members of the association have been invited to attend the banquet. The entire proceeds will be donated to Army and Navy Relief, the American Red Cross, and U.S.O.

Percy C. Magnus, President of Magnus, Mabey & Reynard, Inc., is acting as chairman of the banquet committee. He advises that an elaborate entertainment program will be a feature of the banquet. Tickets are ten dollars, and tables may be reserved for groups of ten or for larger parties. Ladies will be present, and the entire affair is expected to be one of the most important events that has ever occurred in the drug industry.



AIFA Meets at Spring Lake

THE government's attitude toward the agricultural insecticide and fungicide industry, its requirements, and the general outlook were the principal topics of discussion at the Summer Meeting of the Agricultural Insecticide and Fungicide Association held at the Essex and Sussex Hotel, Spring Lake, N. J., August 25 and 26. Also under discussion was a publicity campaign on behalf of the agricultural insecticide and fungicide industry. The idea was turned over to a committee for further development. While it was considered too early as yet to accurately foretell the outlook, the supply situation is considered good. This in spite of the curtailment of imports, particularly pyrethrum and rotenone. Supplies of sulphur, lime, oil spray, nicotine and copper compounds are considered adequate for the immediate future.

Principal participants in the informal remarks of the morning session of Tuesday were: J. B. Cary, president of the association, Philip H. Groggins, Chief of the Chemicals Division of the Office of Agricultural War Relations of the Department of Agriculture; R. C. Roark, in charge

of Insecticide Investigations at the Bureau of Entomology and Plant Quarantine of the Department of Agriculture. The afternoon session was addressed informally by Melvin Goldberg of the Agricultural Chemists Unit of the W.P.B. and Warren H. Moyer, in charge of Insecticides and Fungicides division of the W.P.B. This session was followed by a brief question and answer period.

The Wednesday morning session was a general meeting devoted to committee reports on various phases of the current problems. This meeting culminated in a report of a survey on public relations conducted by Wallace S. Moreland, director of publicity for Rutgers University. It is along the lines of Mr. Moreland's address that the extensive publicity campaign is being developed by the Association. Its purpose is to better acquaint government officials, dealers, suppliers and consumers of the true agricultural insecticide situation.

Preliminary meetings, similar to the one held in Spring Lake, are scheduled to be held on the Pacific Coast in Los Angeles and Portland, Oregon, either late this month or early next.

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List Health Assn. Lectures

The preliminary program of the 71st Annual Meeting of the American Health Association, which meets in St. Louis, Mo., Oct. 27-30, 1942, has just been published in the August issue of the official publication of the association: the *American Journal of Public Health*. The session that will have the broadest interest for disinfectant manufacturers will be held 2:30 p.m., Wednesday afternoon, October 28. The published list of papers to be read includes: *Report of the Standard Methods Committee for the Examination of Disinfectants and Antiseptics* by Chairman, Stuart Mudd, M.D. *Germicidal Vapors as a Means of Disinfection of Air* by O. H. Robertson, M.D. *Ultra-Violet Irradiation as a Means of Disinfection of Air* by Alexander Hollaender, Ph.D. *Relation of Length of Carbon Chain to the Primary and Functional Toxicities of Alcohols* by Henry Welch, Ph.D. and G. G. Slocum, Ph.D. *Changes in the Bacterial Cell Brought About by the Action of Germicides as Demonstrated by the Electron Microscope* by Stuart Mudd, M.D. *Variations in Phenol Coefficient Determinations of Certain Disinfectants* by Charles M. Brewer, Ph.D. *Bacterial Contaminations in Sulfonamide Products* by C. Virginia Fisher, Ph.D., N. J. Accousti, and Marvin R. Thompson, Ph.D.

W.P.B. Stimulates Solvent Salvage

A plan to broaden the reclamation of millions of gallons of war essential chemical solvents and oils was announced late last month by the Conservation Division of the W.P.B. This effort to salvage chemicals critically needed in the war effort is prompted by the fact that over one billion pounds of solvents are now recovered annually. Close to double this amount could be recovered if cooperation of all producers was obtained, said S. Donald Perlman, Executive Chemical Director, Industrial Salvage Section, Conservation Division of the W.P.B.

Steps to speed up the reclamation program have already been taken: a list of reclaiming plants has been

compiled and published for the first time, and a broad educational program for reclaiming and recovering solvents is under way throughout the industry and showing satisfactory results.

All Shellac Allocated

Shellac was placed under complete allocation control on July 31, by the WPB, in a move that all but halted civilian use and indicated further cuts in the amount of shellac that could be used in the production of phonograph records. Shellac for munitions was delivered during July and August, but exemptions and special permits to use shellac granted prior to June 24, were revoked. However, under the new curtailment, seedlac can be used since its ban in the previous priority order has been lifted.

Up Carbon Tet. Use

Double quantities of carbon tetrachloride can now be used by holders of B-2 priority ratings, degreasing machines other than those used for Army and Navy contracts, packaged spotting and cleaning preparations, dry cleaning establishments and for manual cleaning of other than metal parts of electrical equipment. This move, which constitutes amendment No. 1 to order M-41, was brought about by a temporary surplus of carbon tetrachloride for which there is not adequate storage facilities. The amendment is effective up to September 30. The order previously restricted deliveries to B-2 users to 50 per cent of their average monthly consumption for the year ending September 30, 1941. This amendment raises the percentage to 100 per cent.

Build Coast Container Plant

Wilson & Bennett Mfg. Co., Chicago, maker of steel barrels, drums, etc., is developing plans for a new, one-story branch plant at Richmond, Cal. Estimated cost is placed at \$75,000.

New U.S.I. Chi. Office

The Chicago Sales Office of U. S. Industrial Chemicals, Inc., is now located in new quarters at 624 South Michigan Avenue.

Chemical Show Nov. 24-29

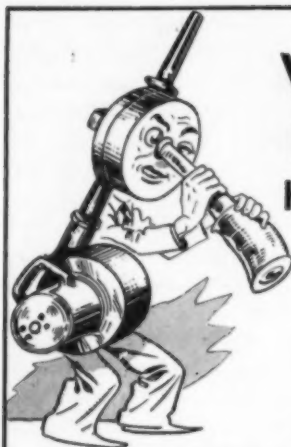
The National Chemical Exposition, to be held at the Hotel Sherman, Chicago, Nov. 24 to 29, will include an educational exhibit explaining the part which kitchen fats and greases, ordinarily discarded by housewives, play in ammunition production. This year's show will be twice as large in number of exhibits and floor space as at the first Chicago exposition two years ago, according to Victor Conquest, director of research for Armour & Co. and chairman of the Show Committee for the Chicago section of the American Chemical Society, which is sponsoring the big affair.

An attendance of 20,000 is anticipated, including chemists, industrial executives, engineers, purchasing agents, government specialists and others. The increased interest taken by manufacturers in the exposition is ascribed to the large part which chemistry is playing in the war and to the search for alternates for many critical materials, as well as new processes and products. Discussion of these problems will feature the program of conferences which will be held throughout the six-day show.

Last Salesmen's Outing Sept. 15

The third monthly golf outing of the Salesmen's Association of the American Chemical Industry took place at the Hackensack Country Club, Oradell, N. J., on August 11. The list of prize winners includes: Paul Dunkel of Paul A. Dunkel & Co.; Leon Miller of Barrett Co.; T. A. Cassidy of Wilmot & Cassidy; C. W. French and N. H. Fyfe of Oldbury Electro-Chemical Co.; P. J. LoBue of Michigan Chemical Co.; R. Boland of *Drug Topics*; J. Eldridge of Virginia Smelting Co.; R. L. Hutchins of Commercial Solvents Corp.; W. B. Mullen of Eastern Industries; H. Erickson of American Water Works & Electric Co.; and Paul Miller of International Cellulocotton Co.

The fourth and final outing of the current season is scheduled for North Hills Golf Club, Douglaston, L. I., September 15.



WAR PRODUCTION HAS CHANGED

our whole
outlook
and has stopped,
for the duration,
the output of
ADAM A. BREUER'S

ELECTRIC INSECTICIDE SPRAYER

WE are now in war production. Our output is being restricted to war essentials. We are doing our utmost to help our nation in its all-out war effort. Consequently, we have had to discontinue, for the present, the manufacture of Adam A. Breuer's ELECTRIC INSECTICIDE SPRAYER.

In addressing this message to our regular customers and prospective users, we are simply making clear our position, so that they will know how sincerely we desire to serve them and would but for the fact that Uncle Sam's demands must be met first. We look forward, however, to the time when we can again supply your needs in Insecticide Sprayers.

We do not sell insecticides. Our business is the manufacture of Sprayers. (Patented in U. S. A. and foreign countries).

BREUER ELECTRIC MFG. CO. 5118 N. RAVENSWOOD AVE. CHICAGO, ILL.



Play Safe—sell or recommend the 4 in 1 wherever your products are used.

- Used and approved by floor maintenance experts since July, 1939.
- Requires no metal whatever, thus assuring an unlimited supply in war time.
- A quality applicator backed by our many years' experience in the industry.
- Every square inch of the premium quality wool pad is usable. The 4 in 1 offers the best insurance that floor waxes, seals and other floor finishes are applied properly.

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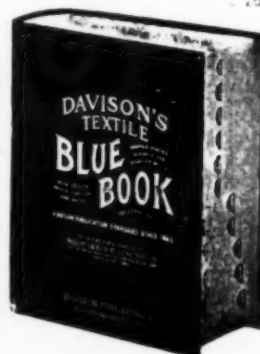
Textile Plants Need Soap

ALMOST NINE THOUSAND Textile Mills, Dyers, Finishers, Bleachers and printers in the United States and Canada are fully reported in the new 77th Year Book. Many Mills and Dyers Buy Soap in large amounts!

In addition 30,000 associated firms are listed and reported—dry goods commission merchants, yarn, cotton, linters, silk, rayon, waste, wool, rags, fibres, machinery, chemicals, supplies and other allied industries.

77th Year

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Supplement
of New Mills
and changes
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Executive, Sales and Production Offices

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Drug Mfrs. Aid Bond Sale

A plan designed to stimulate the sale of war bonds and stamps was outlined before manufacturers and advertising agencies of members of the drug, cosmetic and allied industries at a meeting held in the Hotel Biltmore, New York, on August 20. Briefly, it is the aim of the committee to get all members of the industry to contribute five per cent of their advertising, whether it be radio, newspaper or magazine, to the sale of war bonds and stamps. In order to attain maximum efficiency it is planned that radio and magazine advertisements will be inserted as part of an over-all schedule to insure a regular flow. Manufacturers can cooperate in one of two ways: by allotting a percentage of their space or time, running War bond advertising instead of product advertising, or by an outright cash contribution. The campaign will involve full page and two-column advertisements and will be approved by the U.S. Treasury and the Advertising Council. Ads will bear the name of the company, the name of the product and the words "... in cooperation with the drug, cosmetic and allied industries." It is hoped by the plan to raise the necessary 12 billion dollars a year through the sale of war bonds and stamps and at the same time avoid compulsory pay roll deductions to raise the needed amount.

Amend Alcohol Order

Two minor changes in a revision of the alcohol order, M-30, were recorded by a W.P.B. amendment that permits an increase in the amount of ethyl alcohol to be used for vinegar and decreases the amount used in the manufacture of shoe polish. No other changes were made in the amounts permitted for the manufacture of various products, which are 70 per cent for toilet articles including: hair and scalp preparations, bay rum, shampoos, face and hand lotions, body deodorants, toilet waters, perfume and perfume tinctures, toilet soaps (including shaving cream), mouth washes, tooth cleaning preparations, perfume materials and fixatives, deodorant

sprays (non-body) and shoe polish. Unlimited supplies are permitted for chemical and military uses. References to isopropyl and butyl alcohol and their derivatives are removed from M-30 as they are covered by other orders, and the restrictions on the use of alcohol in anti-freeze are removed for the same reason.

Pass Dispenser Deadline

The extended deadline for the manufacture of military soap dispensers expired September 3. Metal dispensers for Army, Navy, Maritime Commission and War Shipping Administration were granted a month's extension from August 3. Under provisions of the iron and steel conservation order M-126, metal dispensers could not be manufactured for any other purpose after August 3. Sale of dispensers manufactured before that date was permitted to continue.

W.P.B. Studies Wood Closures

Various types of wooden caps principally for glass packages as substitutes for metal and plastic closures are being studied by Ralph Auch, production line specialist who is associated with the Beverages and Tobacco Branch of the War Production Board. Different types of wood, both plain and treated, are being investigated as well as paper and fibre composition closures as part of the metal conservation campaign of the War Production Board.

Rat Repellents

Unpublished work by J. Silver and F. N. Jarvis indicates that flake naphthalene is the most effective repellent for large gray rats. Powdered sulfur, creosote, carbolic acid, copper sulfate and chlorinated lime were partially repellent. Carbolic acid, cedar-wood oil and creosote had merit. The best non-odorous repellents were copperas, lime, lye, sodium fluoride, powdered sulfur and cayenne pepper. The repellent is used in rat burrows or runways, or sprinkled over the material to be protected. Ernest M. Mills and James C. Munch. *Pests* 10, No. 2, 20-1 (1942).

Ration Liquid Soap in Britain

Liquid soap is now rationed in Great Britain by order of the Ministry of Food. Solid types and flakes are already controlled under the rationing plan. Domestic consumers can now obtain for each soap coupon either one-half pint of No. 1 type liquid soap which contains more than 12½ per cent of fatty acids, or one pint of No. 2 soap containing less than 12½ per cent of fatty acids. Other users of liquid soap must obtain a permit from their local food offices authorizing them to buy supplies.

Metro Products Buys Frederick

Metro Products Co. of 57 Ellis St., N.E., Atlanta, Ga., has purchased the Frederick Disinfectant Co., of that city from Frederick Hoyt, owner and founder. Samuel Harris, head of Metro, operates the combined business. Fred Hoyt, former owner of Frederick Disinfectant, has retired from active business and at present is reported serving on the Petroleum Ration Board of Atlanta.

St. Louis Goes for Boats

Among the better known manufacturers of sanitary products and disinfectants in the St. Louis area who have recently become yachtsmen are included Jack Varley and his brother James of Baird & McGuire of St. Louis. The Brothers Varley purchased their cruiser in Chicago and in person drove it via the Drainage Canal and the Illinois River down to St. Louis, having several harrowing experiences and narrow escapes from collisions and foundering en route. Rumor has it that the new Varley cruiser, — suggested name, Coefficient 20,—or maybe Polly V,—is being used this summer to entertain visiting salesmen on the Mississippi River.

Two other new yacht owners in St. Louis are Frank J. Pollnow and his brother Bill of Vestal Chemical Co. who were reported recently to have purchased a 35-foot cruiser. The Pollnow craft was reported purchased down in Tennessee and driven north by the brothers to St. Louis, where they plan to use it for similar purposes as the Varley boat on Lake Alton.

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Great stacks of newspapers,
6½ stories high, at an annual
cost of nearly \$50,000 is what it
now takes to meet the demands
of these same individuals.

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Report 2nd Quarter

Oil and Fat Statistics

THE first quarter trend of reduced consumption of oils and fats continued through the second quarter, according to figures just released by the U.S. Bureau of the Census of the Department of Commerce in its quarterly census of oils and fats. This was especially apparent in crude coconut oil where production plummeted from the 1941 figure of 81 million pounds to 17 million pounds in the corresponding quarter for 1942. The consumption drop was even sharper: 184 million pounds were used in the second 1941 quarter as against only 35 million pounds for the second three months of 1942. A like drastic reduction in coconut oil factory and warehouse stocks was also recorded. There were only 126 million pounds of crude coconut oil on hand as of June 30, 1942, as compared with 176 million pounds on the same date in 1941. Tallow was affected, too. But not quite as badly as coconut oil. Stocks slumped from 289 million to 237 million pounds. The production rate for the second 1942 quarter was up some 20 million pounds while consumption rose by approximately 40 million pounds.

Soybean stocks, consumption and production were also higher during the second 1942 quarter than in the previous year. To be exact, 167 million pounds were produced in the second quarter of 1942 as against 141 million pounds in 1941. Consumption rose to 164 million pounds over a figure of 144 million pounds for the same period a year earlier. Meanwhile, it was encouraging to note that stocks more than doubled by ascending to the figure of 78 million pounds. The '41 mark was 34 million pounds. Crude palm oil declines were painfully apparent as might be expected. Consumption declined 50 million pounds in the period ending June 30, of this

year, and stocks dwindled from 115 to 99 million pounds.

Selected figures from the report relating to oils and fats of particular interest to the soap maker are given in an accompanying table.

Control of Silverfish

Silverfish, *Ctenolepisma urbani* Slabaugh, will not feed on flour pastes containing tartar emetic or sodium arsenite, and pastes mixed with arsenic trioxide, sodium fluoride and sodium silicofluoride are highly repellent. Barium silicofluoride and barium carbonate in flour paste are not detected by the insect. Confined in sodium fluoride or sodium silicofluoride dusts, the insects die in 5-7 days. Pyrethrum dust containing 0.75 per cent pyre-

thrins paralyzes the insects in 5.4 minutes on an average, and they die in 1-11 days. Arnold Mallis. *J. Econ. Entomol.* 34, 787-91.

Metal Polish

A stable aqueous liquid polish for metals contains finely divided, abrasive silica, sodium silicate as a detergent, and finely divided calcium sulfate to prevent hard caking of the silicate with the silica when the composition is allowed to stand and settle. Edwin W. Keller. U. S. Patent No. 2,275,049.

Pyrethrin Determination

The methods of Seil and Tattersfield for determining pyrethrins I and II are inaccurate, mainly because of insufficient steam-distillation of chrysanthemumic acid and errors in titrating chrysanthemumic acid. The author determined the completion of the distillation with Denigès reagent and titrated the acid in an atmosphere of carbon dioxide. V. S. Kononov. *Khim. Referat. Zhur.* 1940, No. 4, 61.

SECOND QUARTER 1942 FAT AND OIL DATA

Factory Operations for the Quarter Ending June 30

Oil or Fat	Production (1,000 pounds)		Consumption (1,000 pounds)		Factory and warehouse stocks June 30, (1,000 pounds)	
	1942	1941	1942	1941	1942	1941
Crude Coconut	17,740	81,054	35,085	184,122	126,087	176,391
Crude Corn	63,097	50,326	60,560	68,973	26,074	15,610
Crude Soybean	167,945	141,180	164,880	144,755	78,719	40,606
Inedible Olive	(2)	.....	126	836	663	1,546
Olive Oil Foots .....	.....	.....	1,098	2,847	12,485	14,816
Crude Palm-kernel ..	(2)	(2)	370	3,201	697	4,114
Crude Palm Oil .....	.....	.....	25,354	73,141	99,253	115,134
Crude Babassu Oil ..	(2)	12,475	4,930	16,084	17,480	5,396
Inedible Tallow	224,446	202,132	342,280	302,842	237,108	289,081
White Grease	34,014	30,313	29,383	38,883	13,233	26,401
Yellow Grease	35,184	31,139	73,673	53,549	52,412	53,884
Brown Grease	26,657	24,035	13,425	14,425	12,110	13,172
House Grease	10,948	10,503	4,297	4,909	4,200	3,264
Fatty Acids	22,323	42,604	17,177	27,614	13,843	10,717
Fatty Acids, distilled..	20,679	13,273	12,151	5,257	12,898	6,591
Red Oil	21,289	19,489	12,985	11,998	(5) 12,986	(5) 7,371
Stearic Acid	13,628	13,589	5,251	4,848	(6) 10,413	(6) 5,297
Crude Glycerin						
80% basis	59,242	66,403	61,717	69,098	15,979	23,267
Glycerin, dynamite ..	26,272	25,884	14,479	14,796	26,799	27,292
Glycerin Chemically						
pure	21,903	27,334	6,654	10,252	33,377	24,171
Cottonseed foots						
50% basis	28,002	30,014	33,626	32,357	25,116	20,153
Cottonseed foots						
distilled	11,052	10,118	8,351	6,862	2,025	3,312
Other vegetable oil						
foot 50% basis	583	542	33	.....	235	109
Acidulated Soap Stock	15,646	14,580	15,145	17,571	32,733	24,697
Miscellaneous Soap						
Stock	662	634	731	782	1,298	579

(2) Included in "all other" vegetable oils.

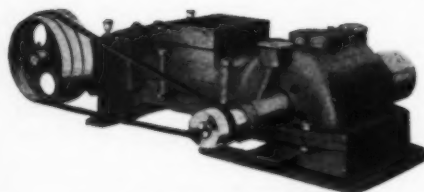
(5) Includes 4,630,000 and 2,727,000 pounds in the hands of producers, 1942 and 1941 respectively.

(6) Includes 2,935,000 and 982,000 pounds in hands of producers 1942 and 1941 respectively.

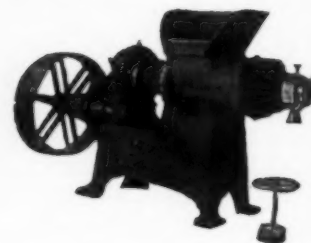
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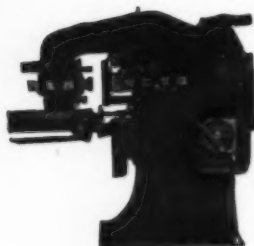
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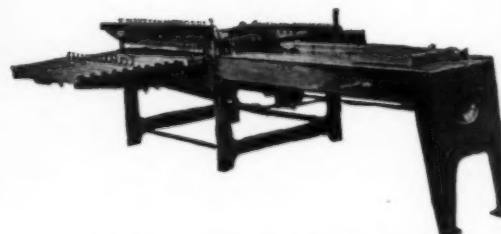
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Salesman wanted to sell well advertised brand of Floor Waxes to industrial trade. Commission basis. Must have following. Reply Box No. 375, care *Soap & Sanitary Chemicals*.

Miscellaneous

Will Purchase Immediately—Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 377, care *Soap & Sanitary Chemicals*.

Floor Brushes—We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

Cresylic Acid for sale—Inquire William D. Neuberger Company, 420 Lexington Avenue, New York City. Telephone LEExington 2-3324.

For Sale: 1—8 Roll Tandem Soap Mill; 4—Foote Power Soap Presses; 1—Jones Pin Die Press; 1—Ideal Amalgamator; 3—Soap Cutting Tables; 2—Slabbers; Blanchard Soap Powder Mills; Filter Presses, 12 in. to 36 in. square; Kettles, 50 to 2500 gal.; Filling, Labeling and Wrapping Machines; Pumps, Tanks, etc. "Cash Buyers of your Surplus Equipment." Brill Equipment Corporation, 183 Varick Street, New York City.

Liquid Soap Dispensers: Manufacturer desires salesman calling on jobbing trades to handle outstanding line of Soap Dispensers. Address Box No. 379, care *Soap & Sanitary Chemicals*.

For Sale: Allbright-Nell 3 x 8 ft. Flaking (chilling) Roll unit. Houchin-Aiken Foot Presses; 600 and 1500 lb. Soap Frames; Cutting Tables; Plodders, 12 x 30 and 16 x 40 Three Roll Water Cooled Steel Mills; 4 Roll Stone Mills; Dryers; Chippers; Powder Fillers; Mixers; Grinders; Filter Presses; Disc Filters; Pumps, etc. Send for Soap Bulletin No. 402. WE BUY YOUR SURPLUS EQUIPMENT FOR CASH. Stein Equipment Corp., 426 Broome Street, New York City.

Chemist Wants to Invest up to \$10,000 in chemical manufacturing business. Extensive experience waxes, polishes, cosmetics. Also interested other fields. Please give details. Address Box No. 380, care *Soap & Sanitary Chemicals*.

Profit by our new Liquid No Rubbing Floor Wax manufacturing process. Save 25 to 50 per cent in production cost. Simple manufacturing method. Available materials. Address Box No. 374, care *Soap & Sanitary Chemicals*.

Wanted: Good second hand Houchin-Aiken Parablock Foot Press with sliding dies and hopper. Address Box No. 387, care *Soap & Sanitary Chemicals*.

Germicidal Soap

Soaps in general have a limited germicidal value, showing a more or less selective action in this respect. *Staphylococcus aureus* is particularly resistant to the action of soaps, not being killed by any kind of known soap by itself. Although phenolic

compounds have previously been considered unsuitable as germicidal agents in soaps, certain phenolic substances retain most of their bactericidal strength when added to soaps and are of great practical value for the preparation of antiseptic soaps.

The phenolic substances most effective against *S. aureus*, a pus-forming pathogenic organism, in the presence of soaps are halogenated 2,2'-dihydroxy diphenyl methanes.

The soap used was a 40 per cent liquid soap prepared from 75 per cent coconut oil and 25 per cent castor oil, with a free alkalinity of less than 0.05 per cent. The 2,2'-dihydroxy-3,5,6,3',5',6'-hexachloro diphenyl methane was also incorporated in solid white toilet soap. The compound mentioned was found capable of killing *S. aureus* in a concentration of less than 1:5000 in the presence of a large excess of soap. A much higher concentration is required in the case of even the best monohydroxy phenols. The compound is a white crystalline material. Its sodium salt was used at a concentration of 1.5 per cent in solid toilet soap, and dilutions made for testing. In liquid soap 1 per cent was used similarly. Eric C. Kunz and Wm. S. Gump, to Givaudan-Delawanna. British Patent No. 545,648.

West Indian Copra

Production of copra products is being encouraged in the British West Indies and British Guiana. In Trinidad and the Windward Islands an annual production of over 100,000,000 nuts, in addition to supplies in British Guiana, provides a steady supply of copra for the local factories. Small plants, mainly directed to the production of soap and edible oils, are already in operation in the Windward Islands. Barbados has a factory for the processing of coconuts and cottonseed oil.

Trinidad's production of copra products has developed to a point where, besides meeting the colony's own requirements, exports are also being made in small quantities. *Perfumery & Essential Oil Record* 33, 176 (1942).

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Every effort is made to keep this index free of errors, but no responsibility is assumed for any omissions.



"Hi, ya, pal! Fancy meeting you here! Remember me? I'm Cuthbert."

... remember me?

LIKE lots of other folks, Jake the Snake has a short memory, and Cuthbert has committed the fatal error of permitting his old palsy walsy to forget him . . . very probably, Cuthbert has not carried any advertising in "*The Snaketown Bugle*" for a long, long time . . . so how can he expect Senor Snake to remember him? The moral of this harrowing tale is "never give them a chance to forget you."

Likewise in the field of soap products, insecticides, disinfectants, sanitary and chemical specialties, if you do not want to give them a chance to forget you, we recommend regular advertising in

SOAP and Sanitary Chemicals
254 WEST 31st STREET NEW YORK

Member Audit Bureau of Circulations

Tale Ends

HOW fast are colors to washing? Every time this subject comes to the front, soapers prick up their ears. Now with the Federal Trade Commission planning trade practice rules and grade labeling on all fabrics to indicate color fastness to this and that, the simple problem of washing a pair of pink rayon pants takes on a new and serious legal aspect for the average soaper.

* * *

The purchase of all household type insecticides for the U. S. Army will definitely be handled by the Quartermaster Corps, says the Washington grapevine. This job has been kicked around the Army for the past six months and now seems to have come to rest, for the moment at least, in the office of the Q. M.

* * *

In Long Beach, Calif., two boys are reported in the newspapers to have destroyed \$40,000 worth of soap in a warehouse by turning a fire hose on the stored material. In view of the large scale on which things are done in our West Coast Sunshine State, \$40,000 worth of soap is probably not an unusual quantity. Nevertheless, the efforts of the boys at this time should not go unrecognized in the soap industry.

* * *

Thus far, 1942 has been a "big" insect year and accordingly a big insecticide year. Much hot, wet weather all over the country accounts for a very heavy demand for finished insecticides of all kinds, and accordingly, the corresponding demand for raw materials has put a rather heavy pressure on suppliers whose problems have in no way been simplified by war complications.

* * *

And in closing, may we remind you, gentle reader, that this is *not* the time to miss any issues of *Soap & Sanitary Chemicals*. If you receive a subscription renewal notice,—don't file it or tuck it away in your desk,—send in your check promptly!

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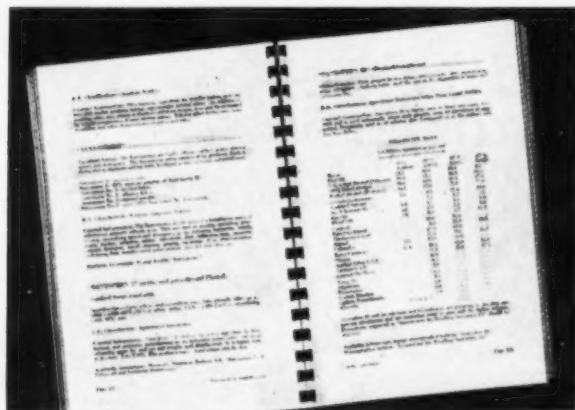
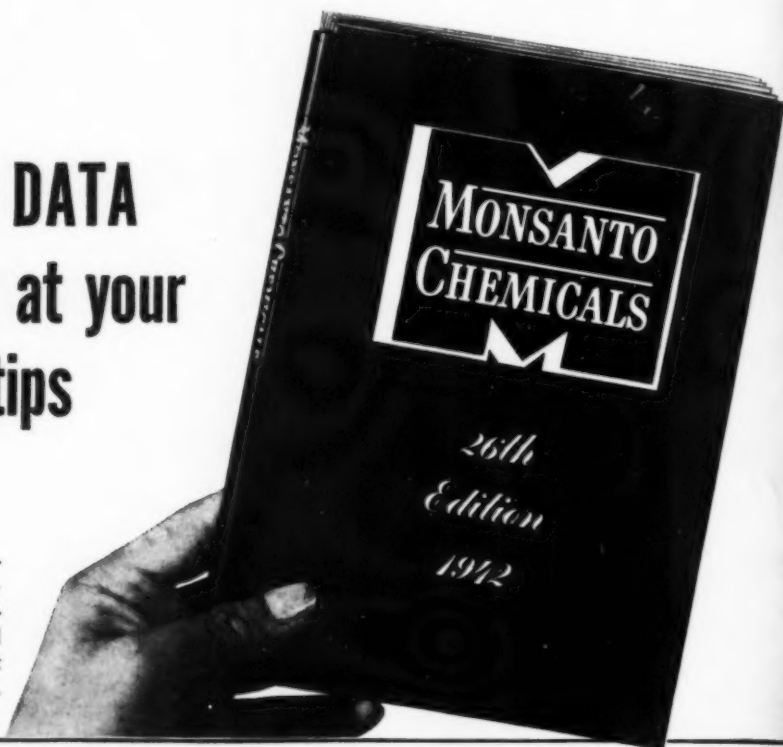
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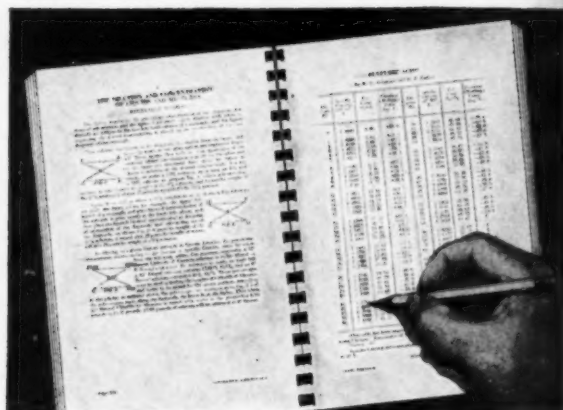


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